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THE ANNUAL REPORT OF THE SCHOOLHOUSE DEPARTMENT

FROM FEBRUARY 1, 1905, TO
FEBRUARY 1, 1906.

BOSTON
MUNICIPAL PRINTING OFFICE
1906

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Boston Board of Schoolhouse Commissioners.
June 8. 1906.

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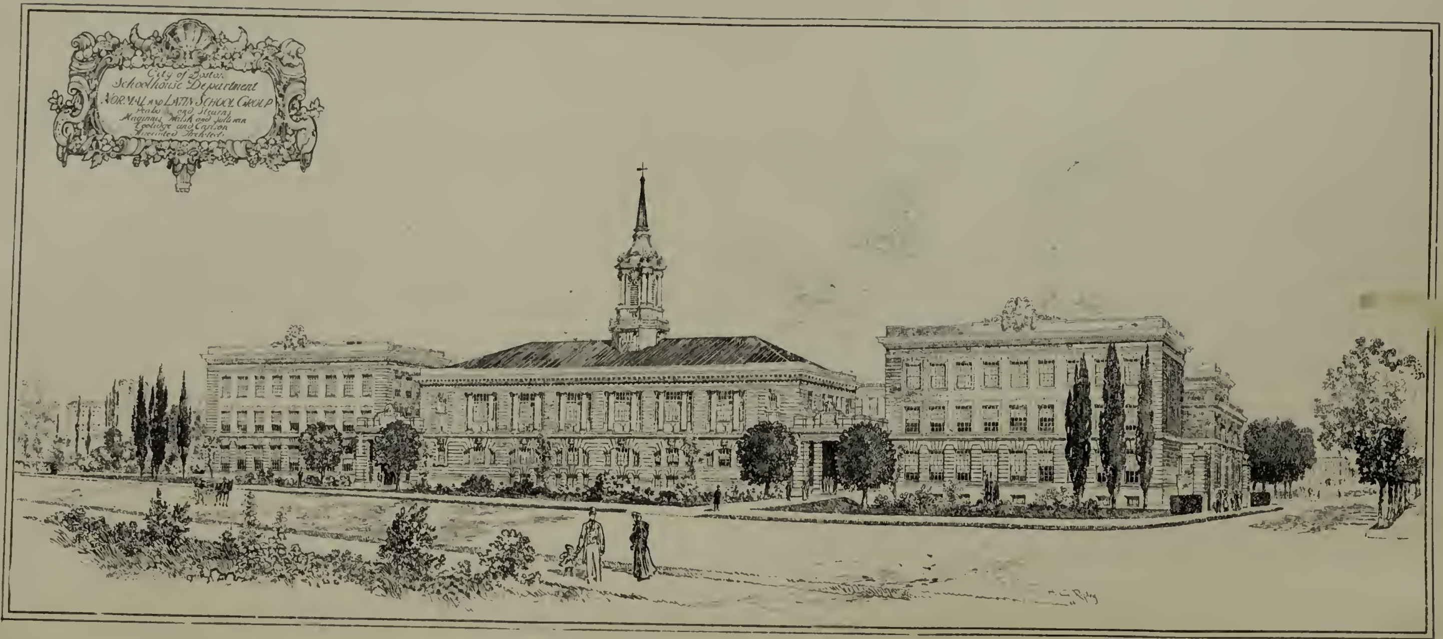
BUILDINGS IN CHARGE OF SCHOOLHOUSE DEPARTMENT.

Number of Permanent School Buildings in charge of this Department	225
Of the above, there are in use as storehouses, etc. . .	3
Number of Portable Buildings	92
Number of Hired Buildings	23
Giving Class-rooms to the number of	36
Number of New Buildings finished by Commission (including Addition to Francis Parkman Schoolhouse) . .	20
Number of Buildings under construction at the present time	3


City of Boston
Schoolhouse Department
NORMAL AND LATIN SCHOOL GROUP
Peabody and Stearns
Maginnis Walsh and Sullivan
Coolidge and Carlson
Associated Architects

REPORT OF THE COMMISSIONERS.

HON. JOHN F. FITZGERALD,
Mayor of the City of Boston:

DEAR SIR, — In accordance with the provisions of chapter 473 of the Acts of 1901, the Board of Schoolhouse Commissioners submits herewith its fourth annual report, covering the period from February 1, 1905, to February 1, 1906.

I.

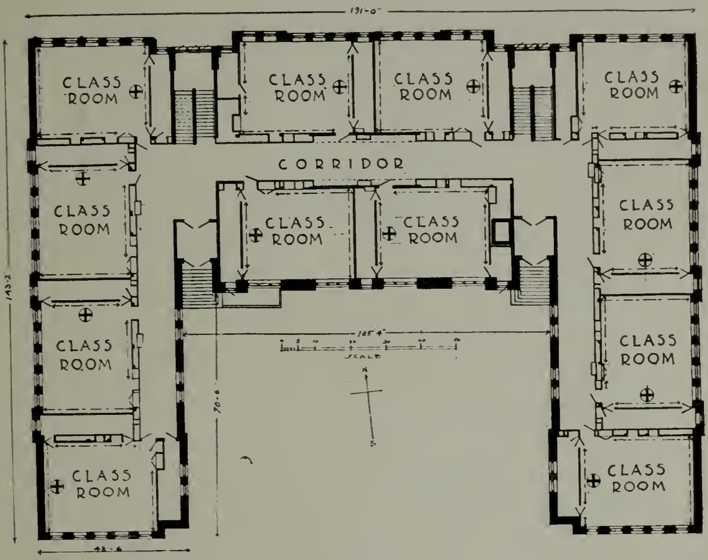
POWERS OF THE BOARD.

In view of the terms of the act establishing this Board and those authorizing the loans that enabled it to perform certain portions of its duties (chapter 473 of the Acts of 1901, chapter 386 of the Acts of 1902 and chapter 392 of the Acts of 1905), it seems desirable to summarize briefly the powers and duties of the Board before reporting in detail on what has been undertaken.

The Board has charge of all school buildings and grounds. To keep in order and to repair these the city can appropriate 25 cents per $1,000 of the tax levy (about $300,000). The Board has also the responsibility of selecting land for new school buildings (the district where one is needed being first designated by the School Committee) and requesting the Board of Street Commissioners to take the land selected; of appointing the architects, and of erecting and furnishing the buildings ready for use. To meet the expenses of this work the city can appropriate forty cents per $1,000 of the tax levy (about $500,000 per annum). The Legislature may also authorize the city to borrow within the debt limit for this purpose, and, as the purchase of land and erection of new buildings is a permanent investment, the city government has taken the stand that all new work should be paid for from the loans, and that the taxes should not be increased for this purpose. The first acts (chapter 473 of the Acts of 1901 and chapter 386 of the Acts of 1902) provided for $5,500,000, and in the Report for 1904–05 will be found a statement (pp. 1–4) of how this amount was expended in meeting the needs contained in the list of forty-two items, and in improving the plumbing and heating of old buildings. Certain items remained over unprovided for. These were practically all buildings connected with higher education; the amount spent on new buildings having been devoted to the primary and grammar needs, which had seemed to the Board to demand its first attention. This statement closes (p. 4) with the request to the Legislature for further permission to borrow for the purpose of erecting the Normal, the Girls' Latin, the Charlestown High and the Mechanic Arts High addition, thus completing the original list of 1901, and also to enable the Board to dispense with hired quarters, as the needs of any district justified the erection of a new building; in other words, to erect such new buildings as might be required to meet the current growth of the school population in the city.

The Board asked for $1,000,000 in the year 1905 and $500,000 a year in 1906, 1907 and 1908. They expected thus to be able to provide for the continuous work of the Board for at least four years in advance, so that the work could be properly studied, laid out, estimated and arranged for in readiness for execution when the appropriations were made year by year.

The Legislature was, however, unwilling to pass the bill in the form in which it was presented, and, taking for granted that $1,500,000 would be ample to provide for the high school needs, which had not yet been met, they authorized the city to borrow $1,500,000 within the debt limit in the year 1905, but made no provision for the succeeding



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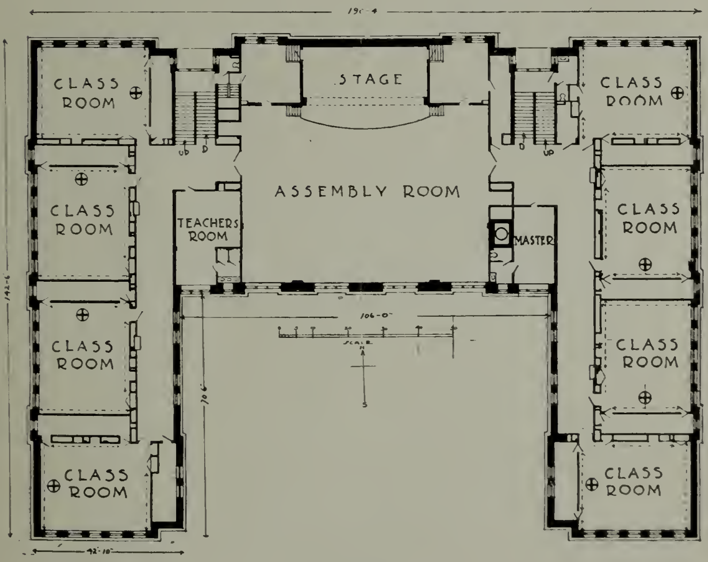

Second Floor.

MATHER GRAMMAR SCHOOLHOUSE.

CRAM, GOODHUE & FERGUSON, Architects.

years. When this appropriation was made by the City Council and approved by the Mayor, the Board at once proceeded with the work then in hand, completing the drawings and specifications for the Mechanic Arts High School addition, for the Charlestown High School, and for the Normal and Latin group, which comprised the Normal, the Model School for the Normal, the Girls' Latin School and a Common Building, shared by the pupils of the Normal and Latin Schools for their two gymnasiums, their wardrobes, lunch-rooms, dressing-rooms, lockers and baths.

Further, it began the study of the other needs which seemed at the time to be most pressing — the enlargement of the Dorchester High School, by building accommodation for additional classes, and a number of minor problems connected with the growth of the school population, primary and grammar. In this the action of the Board is considerably hampered by the fact that it has no definite knowledge of the provision that will be made year by year to meet the expenses of the work that is being laid out, and until such provision is made the Board does not feel justified in taking any final steps towards the acquistion of land, the appointment of architects or any other work that involves the expenditure of money, but can only study the problems with the aid of its own force.

According to the act establishing the Board the city may not borrow money, even within the debt limit, for the purpose of new school buildings, without authorization from the Legislature, and if it is the policy of the city to erect new school buildings and pay for them from the proceeds of bonds it will be necessary to go to the Legislature for permission to do this. If it is the policy of the city to pay for such buildings from taxation, the city has the power to appropriate an amount equivalent to forty cents on a thousand of assessed valuation for this purpose.

In view of the fact that the needs of the city in respect to school accommodation are constantly growing, and that occasionally instances arise where a large annual expenditure is necessary, and this amount is in every case expended for buildings of first class construction, permanent investments for the city, it seems to this Board that there should be a certain amount raised by loan every year, and a certain amount appropriated from taxation every year, which latter should be cumulative and available at any time.

Whether funds are provided by loan or from taxation, one thing is essential for the intelligent execution of the work of this Board, and that is, that it should know for two or three years in advance, at least approximately, what funds are to be at its disposition, for without such knowledge it is impossible to make proper provision for the growing needs of the city, and to lay out the work so that it can be promptly undertaken when the need becomes finally imperative.

II.

WORK EXECUTED UNDER THE APPROPRIATION FOR LAND AND BUILDINGS FOR SCHOOLS.

The work done thus far by the Board will be considered under five heads:

1. Report of progress on buildings described last year and on the new buildings undertaken since then.
2. Critical summary, revising the limits on primary and grammar grades.
3. Standards for high school construction.
4. Report on sanitation installed.
5. Report on fire protection.

(1.) REPORT OF PROGRESS ON BUILDINGS DESCRIBED LAST YEAR AND ON NEW BUILDINGS UNDERTAKEN SINCE THEN.

Item 26. The Mather School, Cram, Goodhue & Ferguson, Architects. The Mather School was finally certified as being practically complete on February 10, 1905, and it was occupied for school purposes on March 31, 1905. The completed cost compares with the original contract prices as follows:

	Original Contracts.	Complete Contracts.
General Contract:		
Morrill & Whiton Construction Co. . .	$228,395 00	* $241,098 44
Heating Contract:		
J. Tucker & Sons Co. .	25,795 00	27,807 00
Plumbing Contract:		
Edward C. Kelly . .	10,617 00	11,645 50
Electrical Contract:		
Lord Electric Co. . .	7,490 00	8,782 05
Totals . . .	$272,297 00	$289,332 99

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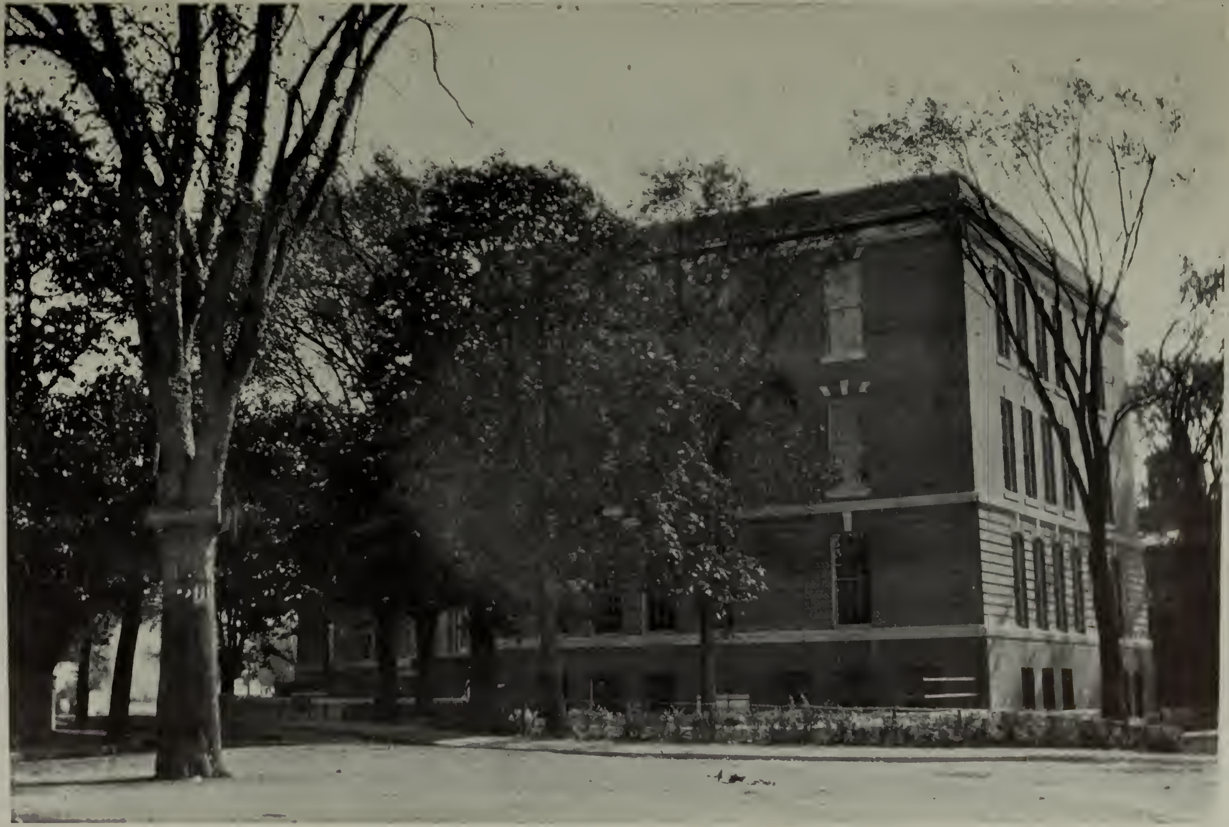
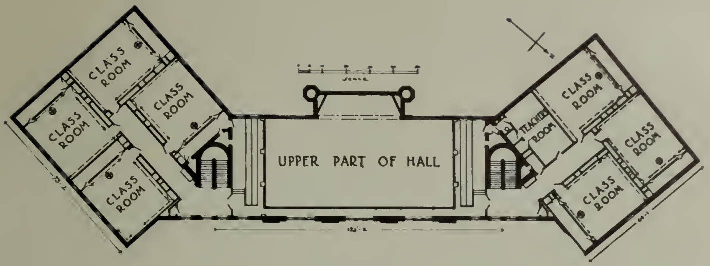
* Includes extra, amounting to $12,882.60, for four additional rooms in basement.



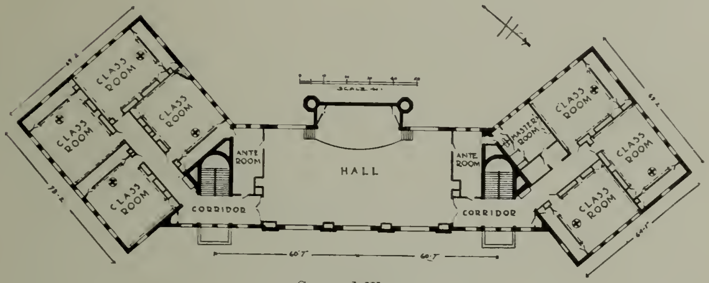
OLIVER WENDELL HOLMES GRAMMAR SCHOOLHOUSE,

Dorchester.

A. W. LONGFELLOW, Architect.



Third Floor.



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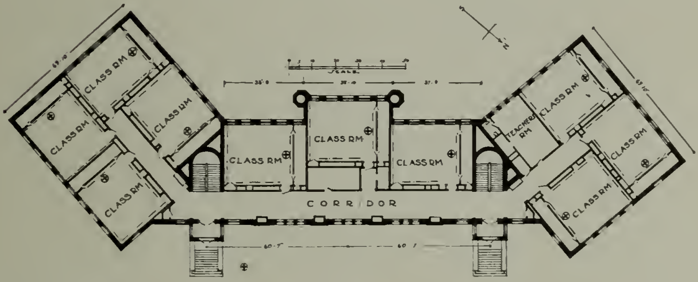
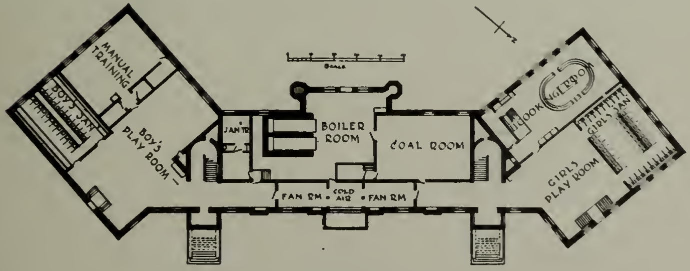
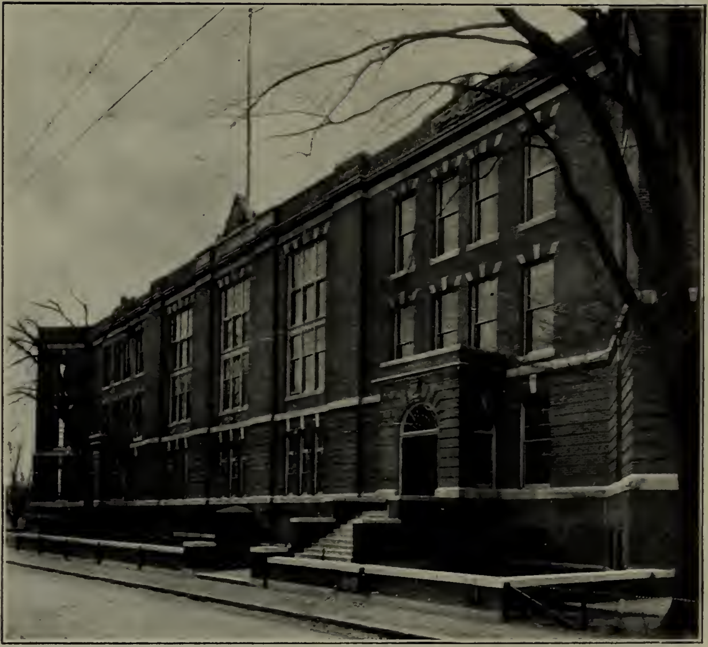


First Floor.



Basement.

OLIVER WENDELL HOLMES GRAMMAR SCHOOLHOUSE,
Dorchester.
A. W. LONGFELLOW, Architect.



OLIVER WENDELL HOLMES GRAMMAR SCHOOLHOUSE,
Dorchester.
A. W. LONGFELLOW, Architect.

The cost per cubic foot and per pupil is given in the schedule later.

Item 10. The Oliver Wendell Holmes School, A. W. Longfellow, Architect. This school was finally certified as being practically complete on August 1, 1905, and was occupied for school purposes on September 13, 1905.

The cost to date compares with the original contract prices as follows:

	Original Contracts.	Complete Contracts.
General Contract:		
Whiton & Haynes Co. .	$150,325 00	* $159,563 85
Heating Contract:		
Lynch & Woodward .	21,970 00	21,930 18
Plumbing Contract:		
Edward C. Kelly . .	7,659 00	8,037 00
Electrical Contract:		
M. B. Foster Elec. Co. .	6,444 00	6,116 99
Totals	$186,398 00	$195,648 02

The cost per cubic foot and per pupil is given in the schedule later.

Item 36. The Dearborn School, E. J. Lewis, Jr., Architect. This school was to have been completed July 1, 1905. There were delays in connection with the foundations, on account of an unusual and somewhat inexplicable flow of water in the basement, and delay on the part of some of those executing portions of the work for the general contractor. Notwithstanding every effort of the architect and the Board the building was not certified as practically complete until December 16, 1905, and was occupied January 2, 1906.

In this case, where there were four contractors on the building, it will undoubtedly be difficult for the Board to fix definitely the responsibility for this serious delay and the loss to the city occasioned by their inability to occupy the building when the school term opened in September. The accounts for this building have not yet been closed, but the original contracts and the amount of the contracts to date are as follows:

---

*This amount includes the sum of $7,620 for additional grading and planting in the remainder of the lot which was partly occupied by the primary school. Even with this addition it is still the most economical grammar school the Board has erected.

	Original Contracts.	Amount of Contracts to date.
General Contract:		
W. N. Pike & Sons . .	$188,888 00	$178,483 11
Heating Contract:		
Ingalls and Kendricken ..	20,494 00	20,874 00
Plumbing Contract:		
M. Ahern . . .	8,175 00	8,612 00
Electrical Contract:		
M. B. Foster Elec. Co. .	5,897 00	5,897 00
Totals . . .	$223,454 00	$213,866 11

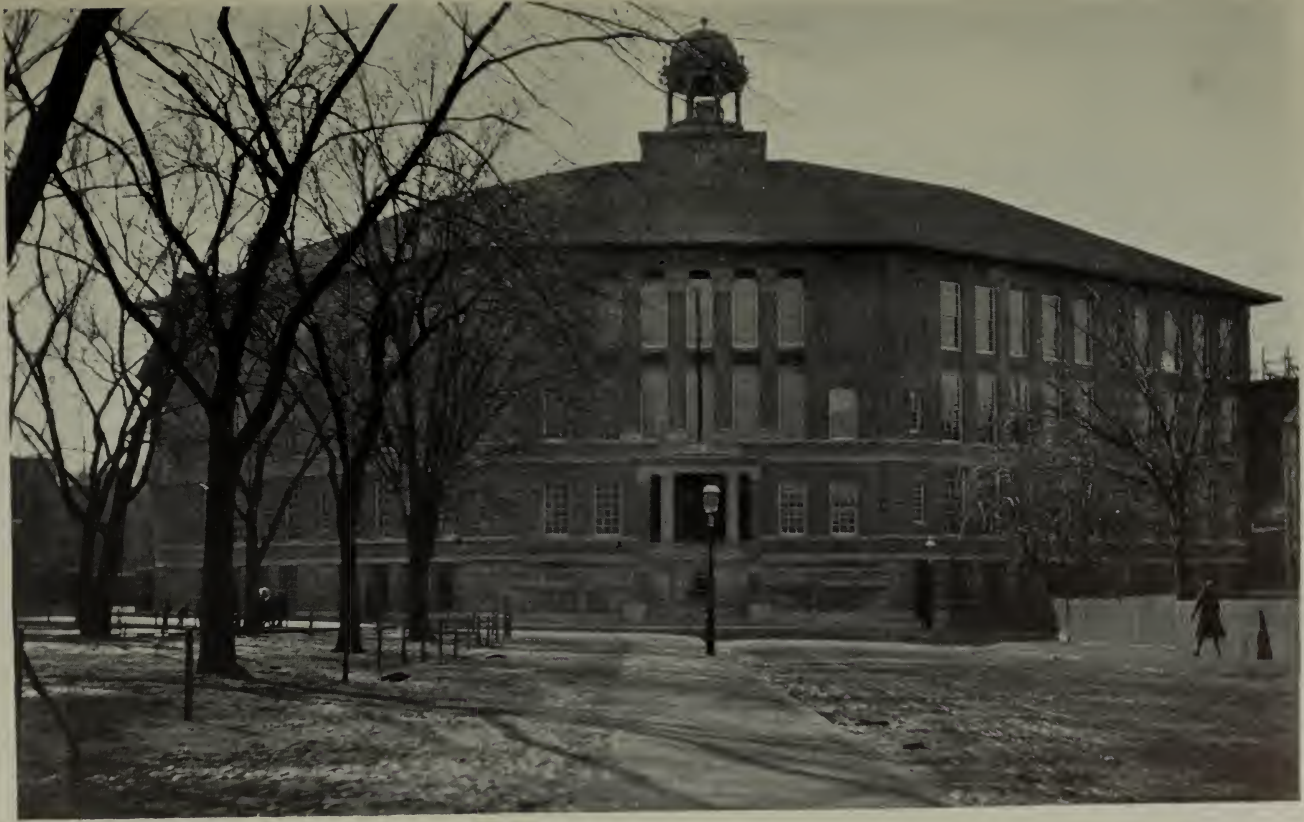
The cost per cubic foot and per pupil will be given in the schedule later.

Item 30. The Thomas Gardner School, Stickney & Austin, Architects. As with the Dearborn, so also with the Thomas Gardner, there were continuous delays in the completion of this building. It was to have been completed on December 30, 1904. For what seemed to the Board good and sufficient reason the time was extended to February 1, 1905. It was not certified as being practically complete until June 16, 1905, and was occupied September 13, 1905.

There seems to have been no such obvious reason in connection with the Thomas Gardner as there was in connection with the Dearborn, but again, there being four contracts on this building, it will be difficult to fix definitely the responsibility for this delay. Pending the question of damages for delay the accounts are not yet closed on this building, but the cost to date compares with the original contract prices as follows:

	Original Contracts.	Amount of Contracts to Date.
General Contract:		
P. H. Jackson . .	$114,730 00	$113,769 15
Heating Contract:		
A. A. Sanborn . .	15,965 00	15,994 04
Plumbing Contract:		
R. F. Brown . . .	5,919 00	6,038 00
Electrical Contract:		
Lord Electric Co. . .	4,578 00	4,466 38
Totals . . .	$141,192 00	$140,267 57

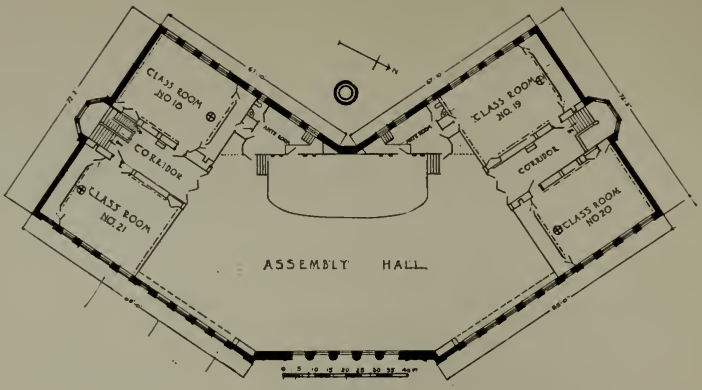
As noted in the last annual report, this building, as well as the Dearborn, is a nincomplete grammar building, and



DEARBORN GRAMMAR SCHOOLHOUSE,

Roxbury.

EDWIN J. LEWIS, JR., Architect.



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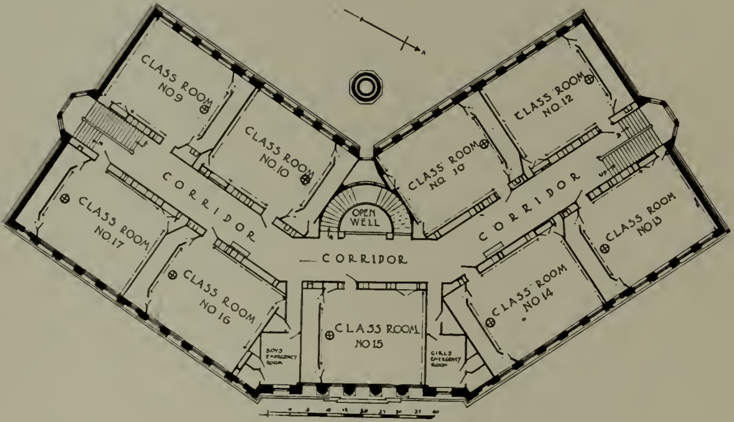
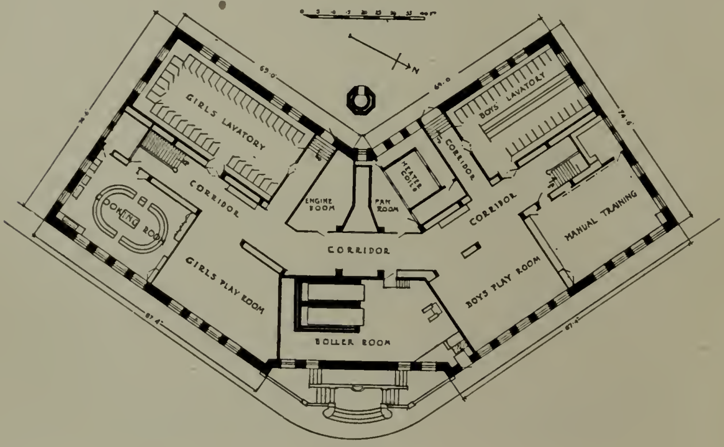
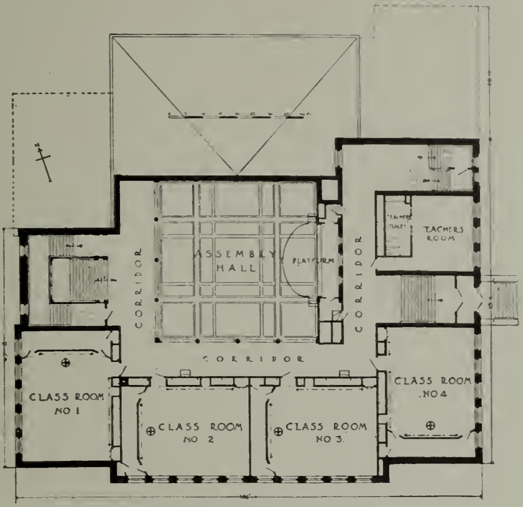


Second Floor.



Basement.

DEARBORN GRAMMAR SCHOOLHOUSE,
Roxbury.
EDWIN J. LEWIS, JR., Architect.



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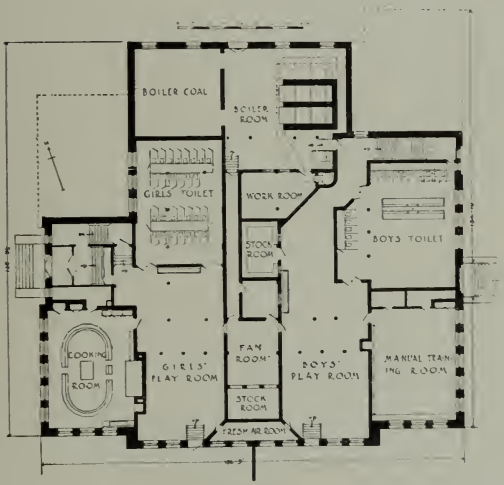
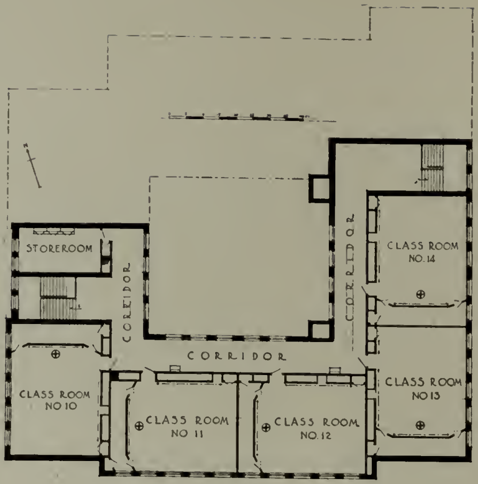


Basement.

THOMAS GARDNER GRAMMAR SCHOOLHOUSE,
Brighton.
STICKNEY & AUSTIN, Architects.



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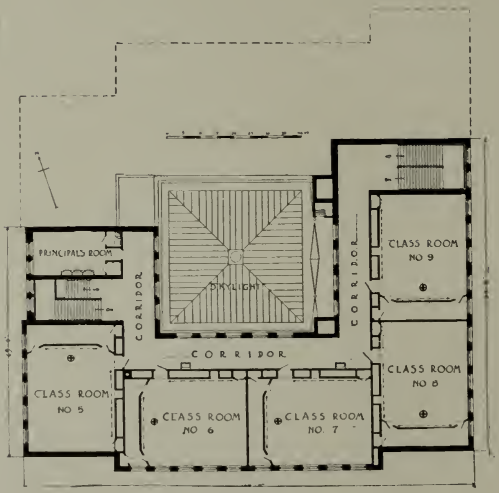

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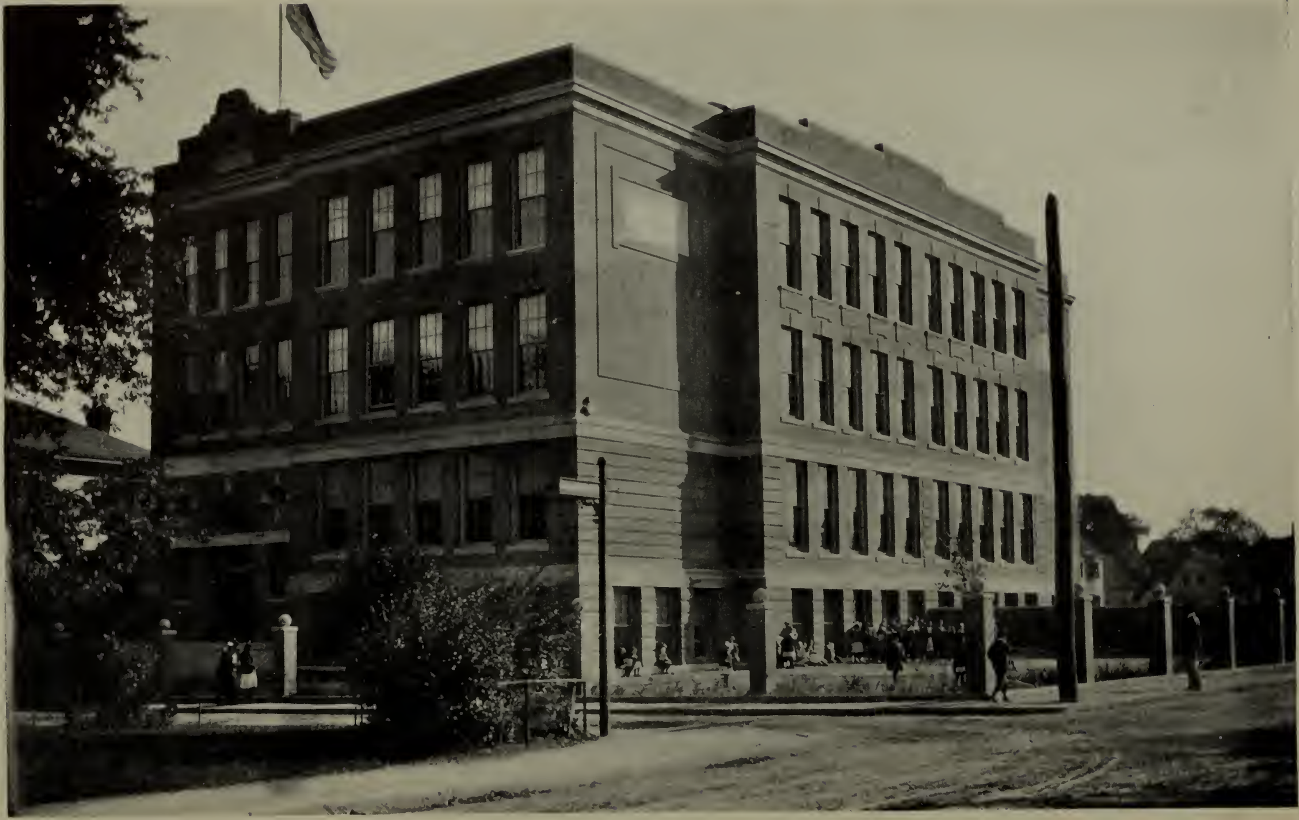
THOMAS GARDNER GRAMMAR SCHOOLHOUSE,
Brighton.
STICKNEY & AUSTIN, Architects.



THOMAS GARDNER GRAMMAR SCHOOLHOUSE,
Brighton.
STICKNEY & AUSTIN, Architects.

when the balance of the rooms are complete will make a better showing on cost per pupil than they do at present. The cost per cube, however, is exceptionally low. In the schedule given later will be found the cost per cubic foot and cost per pupil.

Items 13 and 14. The Oliver Hazard Perry School, Clough & Wardner, Architects. This school has been finally settled since the last report, and the figures are as follows:

	Original Contracts.	Contracts Complete.
General Contract:		
W. N. Pike & Sons .	$116,064 00	$118,497 38
Heating Contract:		
A. B. Franklin . .	17,462 00	17,621 50
Plumbing Contract:		
M. Ahern . . .	4,850 00	5,094 00
Electrical Contract:		
M. B. Foster Elec. Co. .	4,941 00	4,932 75
Totals . . .	$143,317 00	$146,145 63

The cost per cubic foot and cost per pupil is given in the schedule later.

Item 38. The James Otis School, Winslow & Bigelow, Architects. This school was urgently needed, and was let in a single contract, to be completed in eleven months. It was due September 7, 1905, was completed August 5, 1905, and the Contractor, Henry McGahey, received a bonus of $1,350. This was another clear-cut example of the desirability of a single contract where rapid completion is aimed for. It was occupied on September 13, 1905. The original contract was $107,213, and the actual cost, including the bonus of $1,350, was $107,818. The cost per cubic foot and per pupil will be given later in the schedule. The excess of cost is due almost wholly to the piled foundations. Such expense is generally offset by the cost of the land, which is lower than available solid land.

Item 33. The Samuel W. Mason School, John A. Fox, Architect, was due August 1, 1905, about thirteen months being allowed for completion. It was let in four contracts, but the time being ample and the building being well handled, both by the architect and contractor, it was certified as being complete at the appointed time, and was occupied September 13, 1905. This was a piled foundation like the James Otis School, and also a very large lot to grade. The original contract prices and the actual cost of the building are as follows:

	Original Contracts.	Contracts Complete.
General Contract:		
Whiton & Haynes Co. .	$102,480 00	$99,527 64
Heating Contract:		
Huey Brothers . . .	10,477 00	10,447 00
Plumbing Contract:		
R. F. Brown . . .	4,912 00	4,990 00
Electrical Contract:		
Lord Electric Co. . .	3,360 00	3,360 00
Totals . . .	$121,229 00	$118,324 64

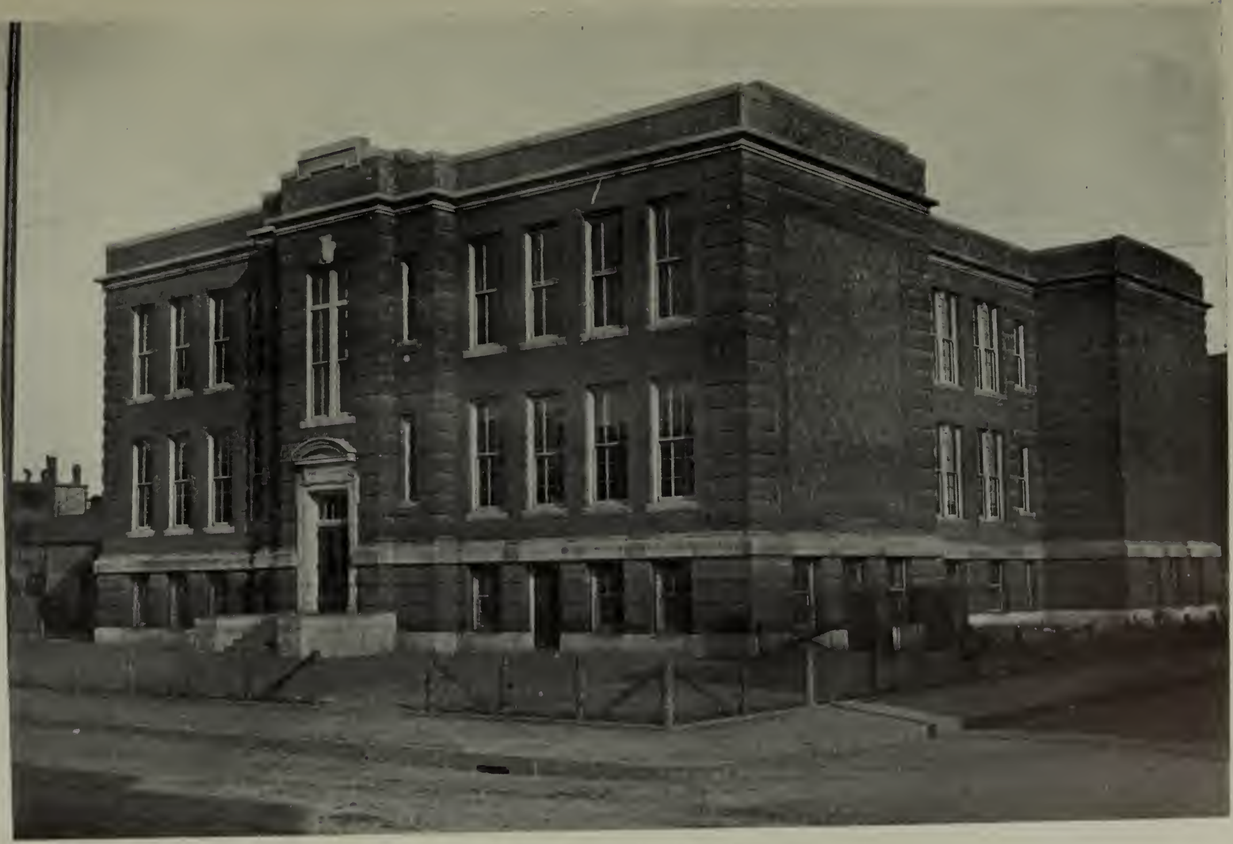
Item 27. The John Greenleaf Whittier School, Parker & Thomas, Architects, was to have been completed on April 27, 1905, but for good and sufficient reasons the time was extended to July 15, 1905. Notwithstanding this extension it was not certified as completed until October 12, 1905. The building was, however, occupied at the beginning of the school term, September 13, 1905, even though much of the work was incomplete and unsatisfactory.

The cost to date compares with the original contract prices as follows:

	Original Contracts.	Amount of Contracts to Date.
General Contract:		
Morrill Construction Co. .	$58,464 00	$58,903 55
Heating Contract:		
Lynch & Woodward . .	7,469 00	7,540 70
Plumbing Contract:		
Bresnahan Bros. . .	3,536 00	3,551 00
Electrical Contract:		
Thomas W. Byrne . .	2,724 00	2,590 90
Vacuum Cleaning:		
Vacuum Cleaner Co. . .	—	2,150 00
Totals . . .	$72,193 00	$74,736 15

The cost per cube and per pupil is given later.

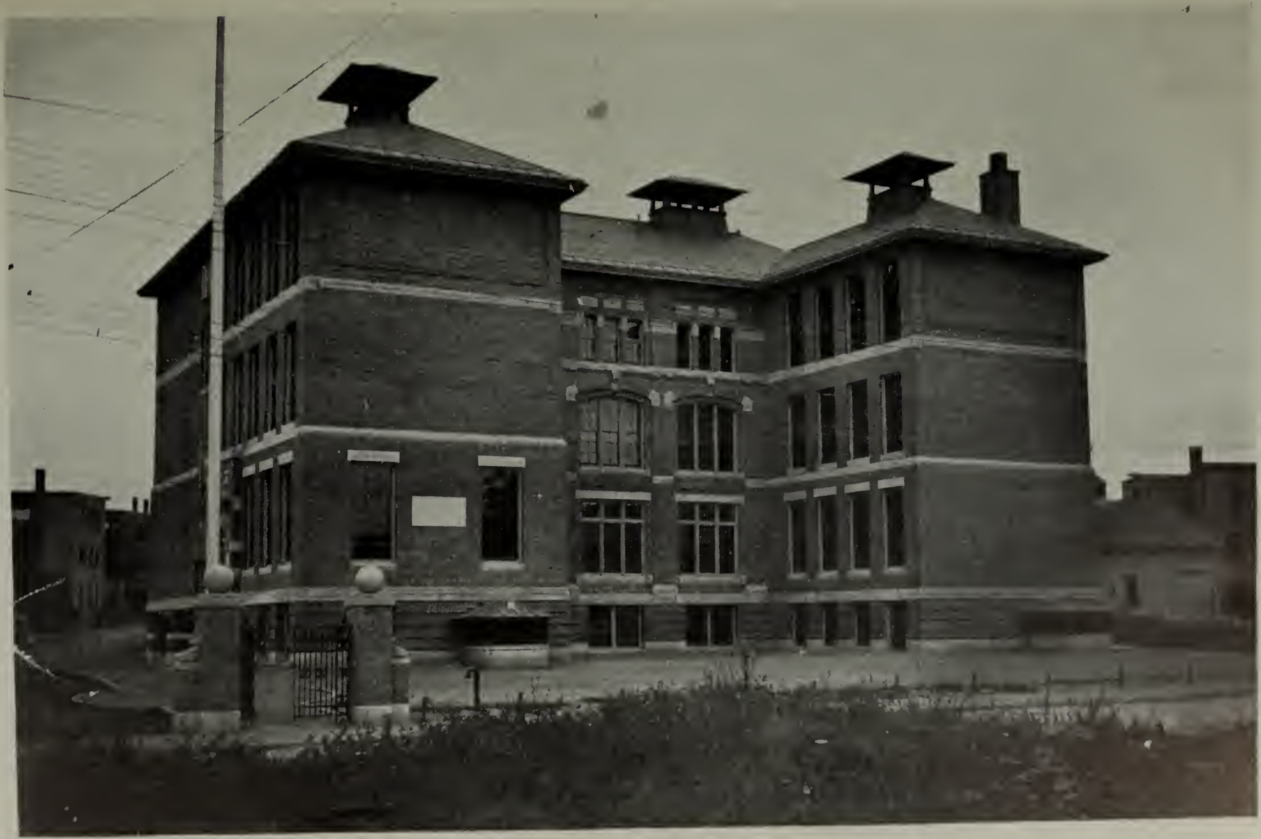
Item 12. The new Tuckerman School, Charles K. Cummings, Architect, was let in four contracts, and a short time was set for completion. Let on December 8, 1904, it was to have been completed August 15, 1905. This is one of the instances where a building let in this way was carried through to completion on time, and that time a reasonably short one. The building is not large, and there were no complications in connection with the foundations or with water, and, as compared with the John Greenleaf Whittier, it seems to have been entirely a case of



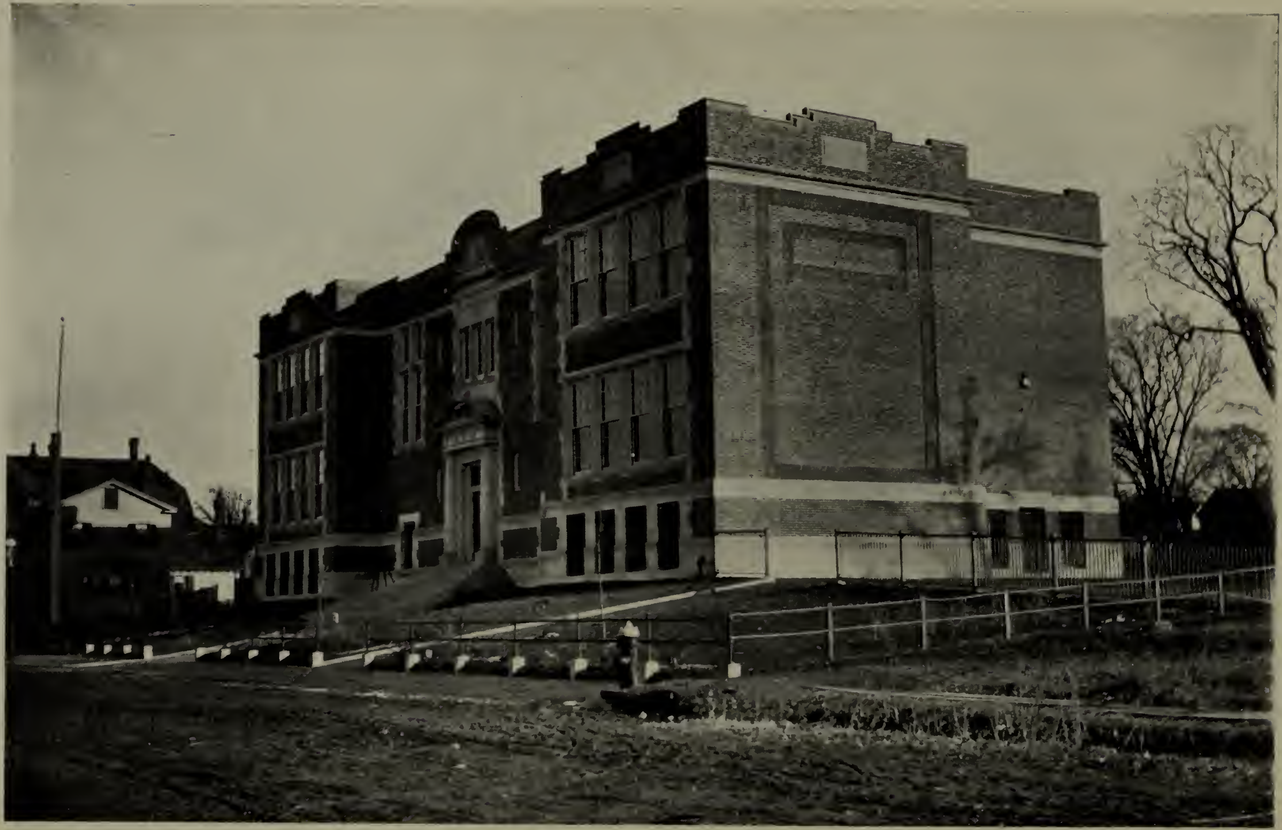
JAMES OTIS PRIMARY SCHOOLHOUSE,

East Boston.

WINSLOW & BIGELOW, Architects.



SAMUEL W. MASON PRIMARY SCHOOLHOUSE,
Roxbury.
JOHN A. FOX, Architect.



JOHN G. WHITTIER PRIMARY SCHOOLHOUSE,
Dorchester.

the competency of the general contractor, the architects in both cases having given excellent service. The building was certified as complete on August 15, 1905, and was occupied at the beginning of the school term, September 13, 1905. The completed cost compares with the original contract prices as follows:

	Original Contracts.	Amount of Contracts to Date.
General Contract;		
William Crane . . .	$61,467 00	$61,875 79
Heating Contract:		
C. H. Sanborn . . .	8,435 00	8,422 00
Plumbing Contract:		
Michael J. Kelly . .	4,173 00	4,226 70
Electrical Contract:		
J. Wilkinson & Co. . .	2,990 90	2,898 76
Totals . . .	$77,065 90	$77,423 25

Cost per cube and per pupil are given in the schedule later.

Item 28. The school previously reported as the Harvard-street District, James E. McLaughlin, Architect, has now been named the William E. Endicott, for the late master of the Christopher Gibson School. The building was let in four contracts, which include the grading of the extensive grounds containing not only this school, but two other wooden buildings. The cost to date compares with the original contract prices as follows:

	Original Contracts.	Amount of Contracts to Date.
Building Contract:		
Mack & Moore . .	$68,900 00	$64,482 00
Heating Contract:		
Pierce & Cox . .	7,973 00	7,973 00
Plumbing Contract:		
Huey Brothers . .	3,657 00	3,633 60
Electrical Contract:		
J. Wilkinson & Co. .	2,829 00	2,863 00
Totals . . .	$83,359 00	$78,951 60

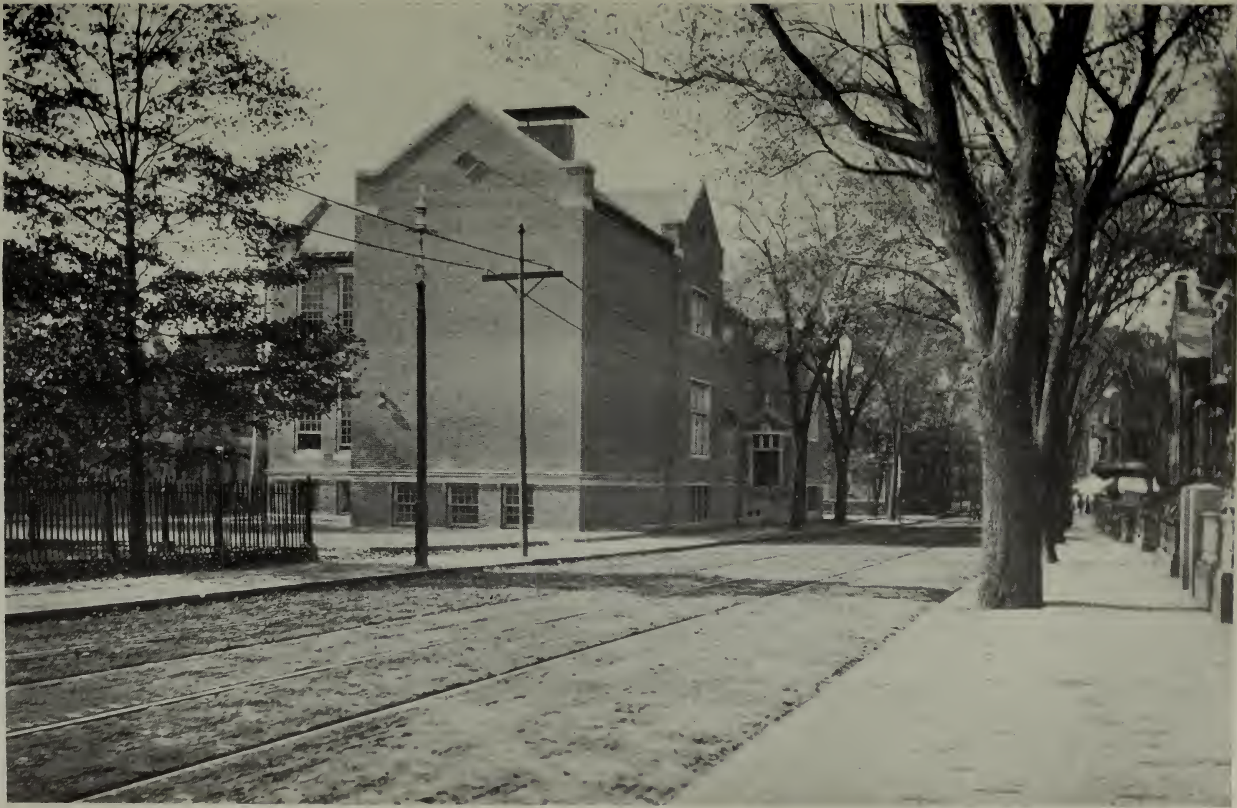
The building was let December 8, 1904, and was to have been completed December 8, 1905, in twelve months. For good and sufficient reason the time was extended eight weeks to January 29, 1906, and on February 1 was still incomplete.

The same limits applied to this building as to the Tuckerman and Whittier, and consequently the outside limit of cost should have been $77,000. The cost per cube and per pupil are given in the schedule later.

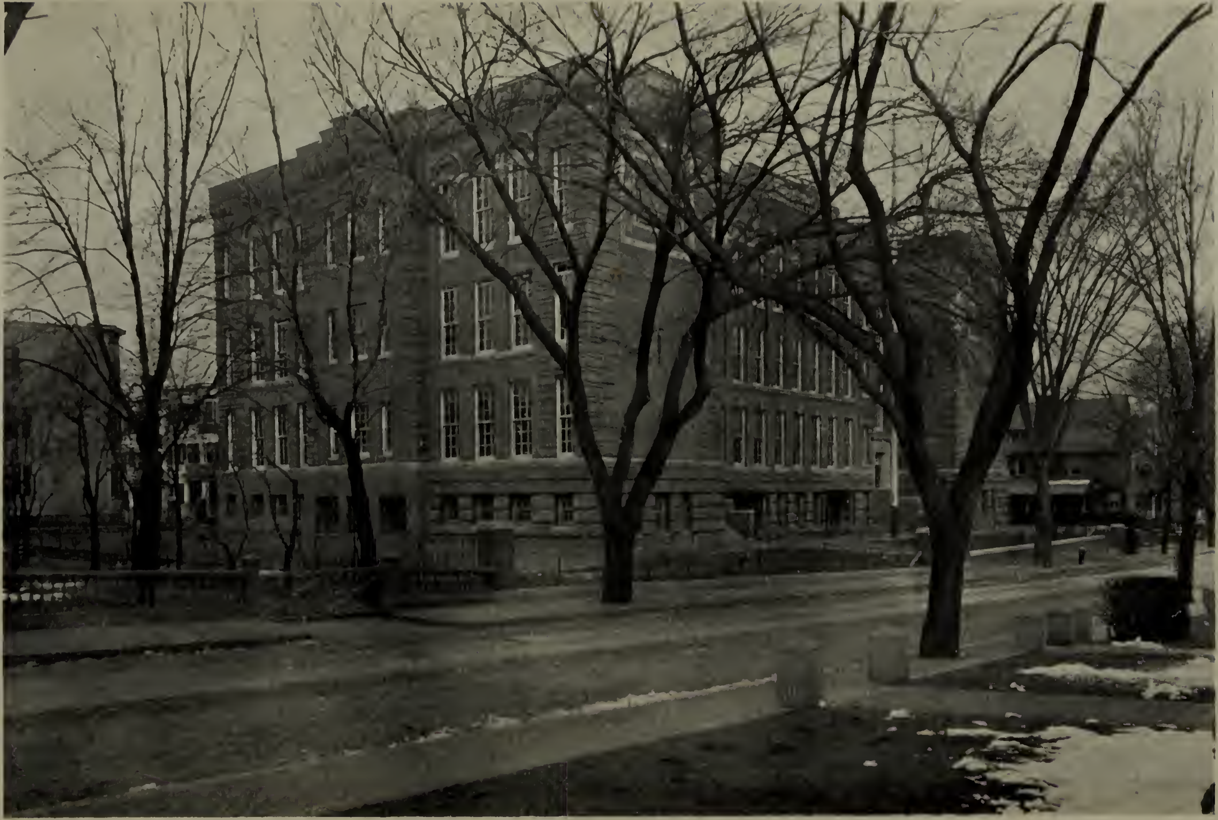
Item 17. Phillips Brooks District, W. H. McGinty, Architect. The addition to the Howard-avenue School has been named the Nathaniel Hawthorne School. This is a nine-room primary, and the limit was set in the previous report to be $69,300. The building was let in four contracts, the main contract April 26, 1905, and was to have been completed December 26, 1905. For good and sufficient reason the time was extended to January 26, 1906. There were serious delays on this building in furnishing the ornamental terra-cotta. Part of this delay was due to the action of the Board, who considered for a while eliminating altogether this ornamental work, and thus delayed the order for the terra-cotta. With this exception the building has gone along fairly well, but it is evident it cannot be completed on the date as extended. The cost to date compares with the original contract prices as follows:

	Original Contracts.	Amount of Contracts to date.
General Contract:		
Whiton & Haynes Co. .	$55,862 00	$54,622 00
Heating Contract:		
Huey Brothers . .	7,527 00	7,527 00
Plumbing Contract:		
T. J. Welch & Co. .	3,100 00	3,100 00
Electrical Contract:		
J. Wilkinson & Co. .	2,691 00	2,703 00
Totals . . .	$69,180 00	$67,952 00

Item 24. The Primary School-house in the Lewis District, Schweinfurth & Craig, Architects, has been named the Sarah J. Baker School. This building was let in a single contract on March 27, 1905. It will be noted that this was let nearly two months after the William E. Endicott. It was let in a single contract with a $50 per diem bonus and forfeiture clause, and was to have been completed on February 27, 1906. The building was certified as being practically complete December 12, 1905, and the contractor received a bonus of $3,850. On this building the board had a clerk of the works from the beginning of the work, a very competent contractor, Angus MacDonald, a careful and conscientious architect, and the work in every respect was remarkably well carried on. The limit of cost had been set at $158,400. It was let for $158,820, and was completed, irrespective of the



TUCKERMAN PRIMARY SCHOOLHOUSE,
South Boston.
CHARLES K. CUMMINGS, Architect.



SARAH J. BAKER PRIMARY SCHOOLHOUSE,

Roxbury.

Schweinfurth & Craig, Architects.

bonus, for $157,208.38, thus showing that there were no omissions in the plans and specifications which involved additional expenses. With the bonus added, the building is but very slightly in excess of the low limit for a primary building. The cost per cubic foot and per pupil is given in the schedule later.

Item 11. The Charlestown High School. Messrs. Stickney & Austin, who were appointed architects on July 18, 1904, were considerably delayed in the preparation of their plans, owing to the fact that this was the first high school which the Board had had an opportunity of studying in detail. It found nothing on the records of high schools previously erected for the City of Boston which gave it any definite information as to what the cost per cube or the cost per pupil should be in a high school of given accommodation, nor what relation the cubic contents should bear to the number of pupils that were provided for. The plans therefore were not ready to be advertised until the summer was nearly over, and, fearing that the cut granite for the exterior might delay the building if the contract was let in the autumn, the late Mayor Collins authorized advertising for bids for granite in August. On August 31, 1905, the contract for the granite was awarded to the New England Granite Company in the sum of $58,000. This firm were unwilling to sign the contract and forfeited their check, and on September 9, 1905, the Board rescinded the award to the New England Granite Company. On September 12, 1905, they awarded it to the second bidder, the Pigeon Hill Granite Company, in the sum of $67,000. In November, 1905, they advertised for the remainder of the building, which was to be let in a single contract, covering all the remainder of the trades. The lowest bid was that of Henry McGahey, amounting to $239,137. Before awarding this contract the Board made certain changes in the equipment of the building and got figures from the architects and the contractors for allowances of $11,510.70. On November 18, 1905, they accepted the original contract and signed the orders for deduction. These contracts, however, did not have the signature of your Honor until January 8, 1906. The building is under a bonus and forfeiture for completion in fourteen months, which date will run from January 8, 1906.

Items 20, 21 and 22 comprise the group now known as the Normal and Latin Group. The three Architects, Messrs. Peabody & Stearns, Maginnis, Walsh & Sullivan, and Coolidge & Carlson, who were appointed May 18, 1904, at the request of the Board, made their own arrangement as to the conduct of this work, and decided that they would have the work executed by all three firms in an independent office, in which one man should be the agent and representative of the three. This arrangement has worked admirably, and it has greatly simplified the consultations between the Board and its architects, and has enabled the Board to have the advantage of the experience of a large number of able architects, and yet the convenience of acting in most cases with a single man.

The borings showed that only one building would have to be piled. Piling drawings were made and the Board advertised for bids for the piling, so as to get them in before the winter, but the bids received being high and the drawings being well on toward completion for the whole group, all the bids were rejected, and the piling will now be included in the general contract. The drawings and specifications are now nearly complete. The group will be let as a whole, but the principal trades will be divided, the general contract, the heating, the plumbing and the electric work being each separate.

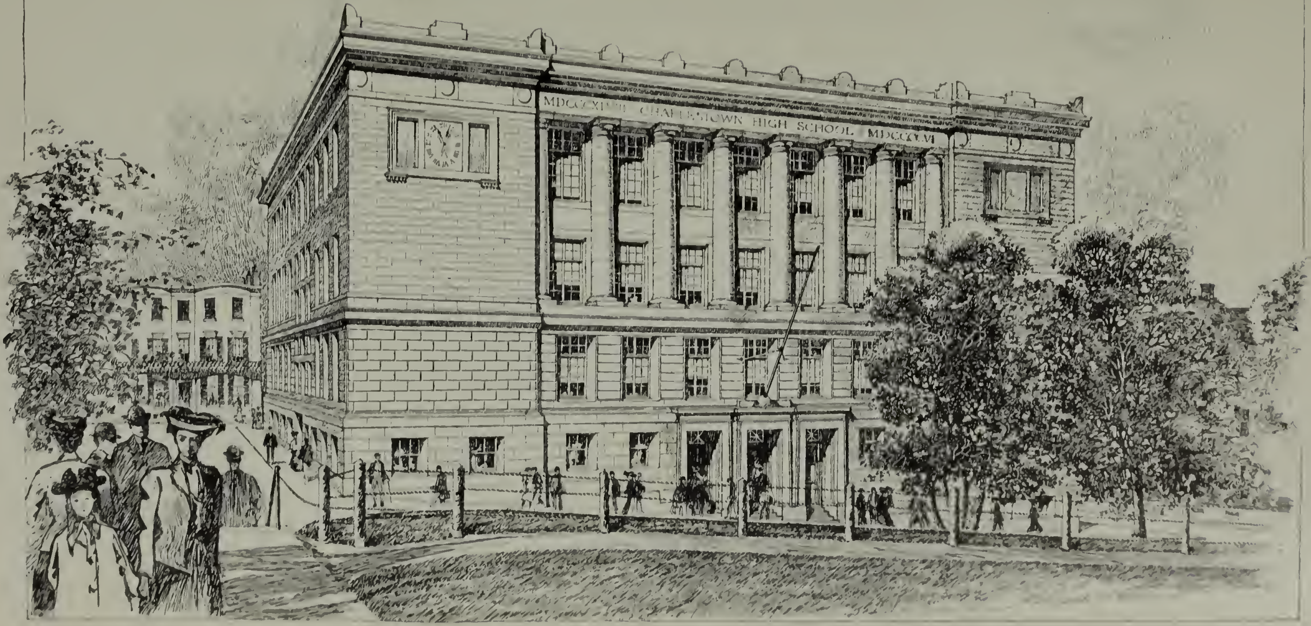
Item 19. The Mechanic Arts High School addition, Wheelwright & Haven, Architects. This building having been held up last year by lack of funds, was this year held up by the report of the Commission on Height of Buildings, which put the district in which the Mechanic Arts High stands under a limitation of eighty feet. The building was planned for a height of one hundred feet. It was not until November 20, 1905, that the Commission on Height of Buildings passed an order exempting this school from the restrictions and thus freeing the Board to go on with the work. As the new School Committee took office on January 1, 1906, it was thought best to defer advertising for bids until matters, not yet finally settled, could be presented to them for their approval.

In a schedule (Appendix VII.) is given a list of all the buildings erected by the Board, showing what extras or deductions have been made, and it will be seen that the architects employed by the Board have made a very creditable record in this respect.

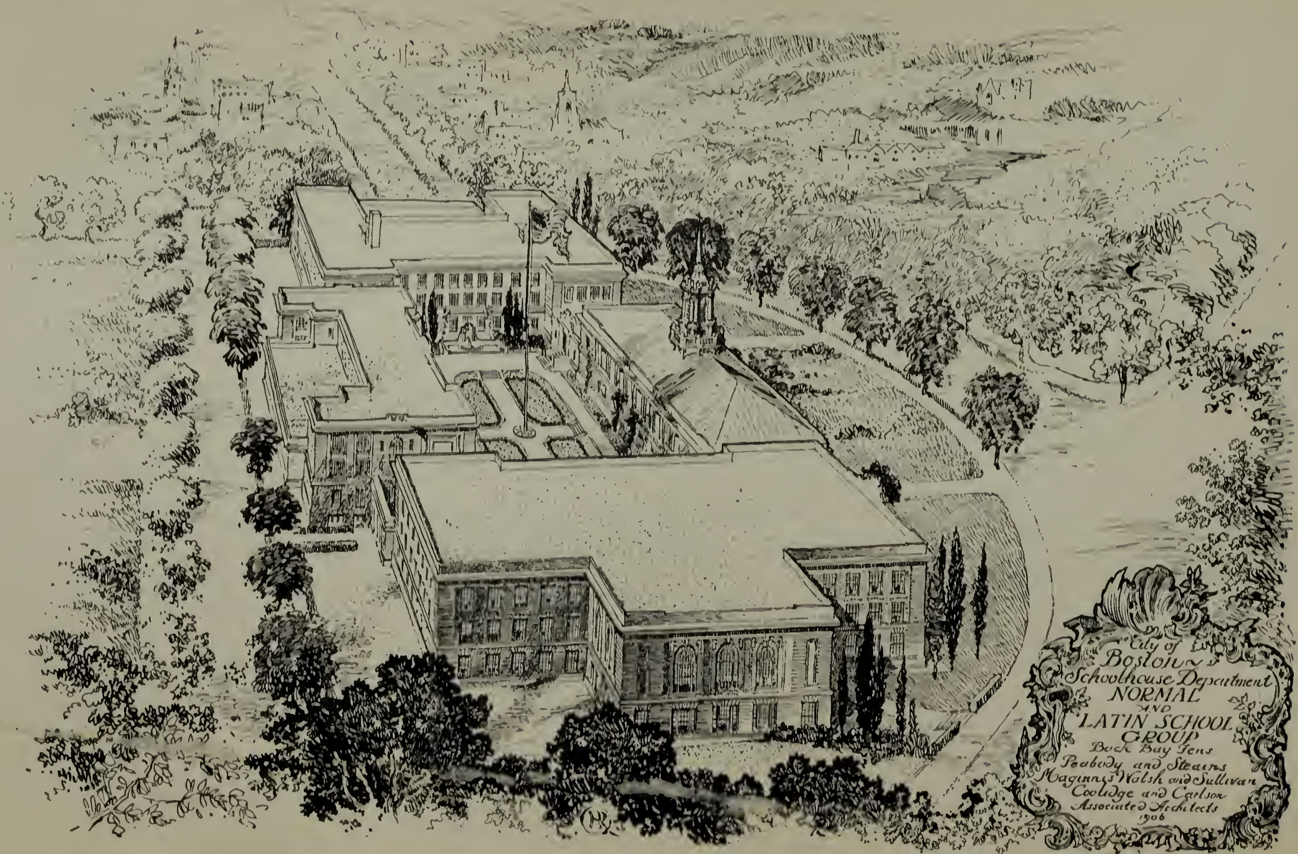
NEW WORK, NOT ON THE LIST OF FORTY-TWO ITEMS.

The Board has necessarily looked ahead beyond the items which were down in the old list and has studied a certain number of the more pressing of the problems. The only ones about which any definite action has been taken are as follows:

CHARLESTOWN - HIGH - SCHOOL BOSTON - MASS
STICKNEY - AND - AUSTIN - ARCHITECTS



(For plans see page 53.)



(For plans see page 54.)

The Dorchester High Annex. For some years the Dorchester High School has had its very large capacity seriously overtaxed, and each year is adding to the growth of this school. The Board had previously considered the desirability of attempting to fit for use the space in the roof, but the cost of this seemed to be entirely disproportionate to what would be gained. They therefore decided that it would be better to purchase adjacent land, which could be done at a reasonable price, and erect thereon a building for class-rooms only, leaving the original building just as it stands. On May 24, 1905, the Board requested the Board of Street Commissioners to take land containing 20,680 square feet. Messrs. Hartwell, Richardson & Driver, the architects of the Dorchester High School, were, on June 24, 1905, appointed architects for the new building, and have made preliminary sketches for the same which have been approved. These drawings contemplate a building containing twelve class-rooms and six recitation rooms and with a seating capacity for four hundred and twenty. As the old building has seating capacity for seven hundred and forty, it will when completed be the largest high school in the city.

The Edward Everett District. As far back as the time when the list of forty-two items was made, in 1901, there was a demand for a new grammar school in the Edward Everett District. It was not thought to be absolutely imperative at that time, but it seems now as if the time had come when the new building should be built. With this in view, the Board has asked and received the opinion of the Superintendent of Schools confirming their selection of a lot, but no other action has been taken.

The Board has also made a careful study of the more congested districts, and is prepared to advise with the Superintendent as to the best method of meeting other pressing needs.

(2.) CRITICAL SUMMARY, REVISING THE LIMITS IN GRAMMAR AND PRIMARY SCHOOLS.

The experience of the Board in connection with the erection of its more recent buildings leads it to believe that the limits that have been set for the cubic contents and cost per cube are fairly accurate, but that either of the extremes is difficult to meet. Of the four small primaries, three of ten rooms and one of nine, the nine-room building and one of the ten-room buildings came within the high limit, the former only because it was an old lot, already graded, paved and fenced, so that there was but very little expense outside of the building itself. It seems evident that only the most rigid economy in the primary buildings having an accommodation of twelve rooms and under, will keep them below the limit of 35,000 cubic feet per room, and 22 cents per cubic foot, and that even rigid economy will not do this if there is anything unusual, such as expensive foundations or exceptional expenses outside the building. A problem equally difficult is to get even the largest buildings down to the low limit. While everything that was necessary was included in the Sarah J. Baker School, a twenty-four room building, the most strenuous efforts were made to keep the building down, by the elimination of everything that was not essential. Notwithstanding this care, however, the building has just reached the low limit.

With the grammars it has been found even more difficult to keep the small buildings within the high limit; 45,000 cubic feet per class-room and 22 cents per cubic foot seems to be an extremely difficult figure to meet, unless the building is certainly larger than fourteen rooms, and, with one exception, the Oliver Wendell Holmes, which is one of those examples which occasionally brightens the career of the statistician and helps to balance averages, the Board has not been able on large grammar buildings to get down to the low limit of 40,000 cubic feet per class-room and 22 cents per cubic foot.

As the grammar has more rooms for general use than the primary, these rooms being standard in size and equipment, so is the difference between a large and a small grammar more marked than between a large and small primary. Both large and small grammar schools contain assembly halls to seat five or six hundred, and a cooking-room and manual training room. The cubic feet for a grammar might be revised as follows:

Number of Rooms.	Number of Cubic Feet.
20 or over	40,000
18	42,000
16	44,000
14	46,000
12	48,000

Further figures have been taken which may prove useful as indicating how the expense of the buildings is divided up among the contracts which are generally in use in the City of Boston — that is the four contracts — for the building, for its heat, its plumbing, and for its electric work. Roughly speaking, 84 per cent. is the building, and of the remainder (16 per cent.), 9 per cent. goes to the heating, 4 per cent. to the plumbing, and 3 per cent. to the electric work; on a basis of 22 cents, 18 cents to the building, 2 cents to the heating, 1¼ cents to the plumbing, and ¾ cent to the electric work. A schedule is included elsewhere (Appendix VI.) giving the cost of the various buildings, the percentage of the different contracts, the cubical contents, the cost per cubic foot, and the cost per cubic foot of the various contracts, with the accommodation of the school and the cost per pupil.

(3.) STANDARDS FOR HIGH SCHOOL CONSTRUCTION.

In attempting to establish similar standards for high schools, the difference between a large and small school is still more marked than it is in grammar buildings. Every high school requires, besides its class-rooms, at least three laboratories with a lecture room, a handicraft room (corresponding to the grammar manual training room), household science rooms (corresponding to the grammar cooking room), and a gymnasium with its dressing rooms and baths. All of these are of standard size to accommodate a class, and consequently are fixed irrespective of the number of pupils in the school.

Beside such high school requirements as these, which are fixed by the size of a class, and not by the size of the school, there are the assembly hall and the recitation rooms, which to a certain extent would be governed by the size of the school. One would expect therefore to find a difference in cost between a school of five hundred and one for seven hundred or one thousand to be small compared to their difference in ccommodation.

During the period from 1898 to 1901, the city has built three high schools, the Dorchester, the East Boston and the South Boston High. These three, and the Charlestown High, under construction, figure as follows:

BUILDING.	No. of pupils.	Total cubic feet.	Cost of Building.	Cost cubic foot.	Cubic feet per class-room, 40 pupils per class-room.
				cents.	
Dorchester High School........	740	2,007,588	$321,214 13	16	108,518
East Boston High School......	588	1,161,301	281,040 57	24	77,420
South Boston High School.....	798	1,528,662	343,719 76	22	76,433
Charlestown High School.....	540	1,170,000	294,626 30	25	86,666

Of the above schools, the Dorchester High encloses a large unfinished space under the roof, and consequently is not a good guide as to the economical cube in relation to accommodation. It will be seen later, however, that its excessive cube is more than offset by its low cost per cube, and consequently its actual cost is within the reasonable limit for its accommodation. The East Boston High and South Boston High are compact plans, and the plans of the new Charlestown High have been very carefully studied to contain all modern requirements, including household science and handicraft rooms. Taking these three examples of carefully studied, compact plans, the following experimental table is compiled. Beginning with a school accommodating five hundred and forty pupils, 82,000 cubic feet per forty pupils is allowed. A school of larger accommodation will cost practically the same amount per cubic foot, but will have a cubic contents greatly reduced in proportion to its accommodation, because the necessary high school equipment will remain fixed and only class-rooms will be increased.

The ratio appears from these three examples to be a reduction of about 4,000 cubic feet per forty pupils for every increase of one hundred and twenty pupils in the total accommodation. This would give a table as follows for calculating the cube of a building whose accommodation is fixed:

Accommodation.	Rooms at 40 Pupils.	Cubic Feet per Room.	Cube.
520	13	82,000	1,066,000
640	16	78,000	1,248,000
760	19	74,000	1,406,000
880	22	70,000	1,540,000
1,000	25	66,000	1,650,000

To arrive at the proper cost per cubic foot, one may take the cost of primary and grammar as a basis (22 cents) and add 1 cent to the general contract for the extra equipment, ½ cent on the plumbing for laboratories and distributed toilets, and ½ cent on the electric for the work in laboratories. This would give 24 cents in place of the 22 cents for the cost per cubic foot, both these figures based, of course, on the conditions of solid ground for foundations. As elsewhere stated, piling or very deep footings will add about 2 cents.

Applying these figures to the four buildings, now including the Dorchester High, it is seen that the Dorchester High answers to test and is shown to be economical.

BUILDING.	Accommodation	Rooms.	Cubic ft. per room.	Cost, Cubic ft.	Cost of Building.
Dorchester High School..........	740	18.5	74,000	cents. 24	$328,560 00
As against actual cost..........	....	....	....	....	321,214 13
East Boston High School..........	588	14.7	80,000	24	282,240 00
As against actual cost..........	....	....	....	....	281,040 57
South Boston High School	798	20.0	72,000	24	345,000 00
As against actual cost..........	....	....	....	....	343,719 00
Charlestown High School.........	540	13.5	82,000	24	265,680 00
As against contract for building with granite exterior..........	....	....	....	....	294,626 00

In the above cases the figures are all on the same basis. The actual cost of the three completed high schools includes what is in the contract for the Charlestown High School, that is, all the equipment of every description, except the furniture. In no case is the architect's commission included, consequently the figures in the three completed high schools will be lower than those given in the auditor's accounts, as these include the architect's commission, which for purposes of comparison are left out here.

(4.) SANITATION INSTALLED.

As reported last year the work of replacing unhealthy systems of sanitation in the old school buildings was practically completed then. This is by no means equivalent to saying that the old buildings are now equipped with modern first-class plumbing. Among the oldest buildings there are some the condition of whose structure is hardly such as to warrant going to the expense of putting in new plumbing. There are buildings that ought to be taken down and replaced by suitable modern buildings. There are a large number of buildings that have systems that were installed under the City Architect some ten or twelve years ago, which have flush vaults, a system not in itself unsanitary, but by no means up to modern standard, and in some cases these systems are not even in condition which would warrant their being pronounced good of their kind. The work of improving sanitary conditions in future will, however, fall entirely upon the amount appropriated each year for repairs.

The fixtures in use by the Board are the same as those reported on in previous years. The following is a description of the work done this year:

BLACKINTON SCHOOL. This is an eight-room building, formerly a primary school in the Emerson District, but now used for both primary and grammar classes in the new Blackinton District. Old brick flush vault, together with all old plumbing throughout building, removed. New system installed in basement, consisting of 24 short hopper closets, 36-foot slate urinal, 2 slate sinks, 1 galvanized-iron sink for janitor. Above the basement were placed 4 slate sinks, a new master's closet and bowl. All new vents, wastes and supplies throughout building. A new system of yard drainage, consisting of 3 catch-basins, was also installed and connected to main sewer. In connection with this work a new master's office was built on the second floor and the building painted and tinted throughout. Completed September, 1905. Cost, $5,555.89.

DORCHESTER-AVENUE SCHOOL. This is a four-room primary building in the Mary Hemenway District. Old brick flush vault and urinal, together with all old plumbing, removed. New system installed in basement, consisting of 10 short hopper closets, 15-foot slate urinal, 1 galvanized-iron sink for janitor, 2 slate sinks. Above the basement were placed 2 slate sinks, 1 water-closet and bowl for teachers, 1 water-closet for kindergarten, 2 slate sinks. New wastes, vents and supplies throughout. In addition to this, new sill cocks and conductors were installed. Fan system of local ventilation; building painted and tinted throughout. Completed September, 1905. Cost, $4,811.85.

JOSHUA BATES SCHOOL. This is an eight-room primary building in the Dwight District. Old long hopper closets and all old plumbing in building removed. New system installed in basement, consisting of 17 short hopper closets, 20-inch slate urinal, 2 slate sinks, 1 janitor's galvanized-iron sink, 1 janitor's water-closet. Above the basement were placed 2 slate sinks, 1 teachers' closet and bowl. New wastes, vents and supplies throughout. A complete system of yard drainage was installed, consisting of 4 catch-basins, connected to main sewer. Electric fan system of local ventilation installed. Owing to nature of soil in this locality it was necessary to relay the entire basement floor, which had settled badly. Iron floor beams were laid, on these a flooring of concrete slabs was placed and the entire floor covered with an asphalt finish. The heating and ventilating system was repaired, the stacks in basement bricked up and and a general rearrangement of galvanized iron in-takes made. Completed September, 1905. Cost, $7,500.

PRESCOTT SCHOOL. This is a ten-room grammar school in the Charlestown District. All old sinks removed, with vents, wastes, and supplies connected to same. New installation of slate sinks, 5 in number, 1 galvanized-iron sink for janitor, new master's closet and bowl, new teachers' closet and bowl, new janitor's closet. New installation connected to present drain. Completed September, 1905. Cost, $2,396.75.

(5.) FIRE PROTECTION.

This year the Board has laid out, as in previous years, a considerable amount of work to be done along the lines of their previous recommendations, of fireproofing and making more safe the basements, and of improving the exits from the buildings, and also continuing the work of installing fire-escapes where they seemed most needed. Owing to the increased burden on the amount appropriated for repairs, and the fact that the expense of fire protection could no longer be taken out of the now exhausted appropriation which covered such needs under the original bill, the Board was obliged to curtail considerably the amount of work laid out, and was obliged to curtail still further the amount of work actually put in hand, owing to the expense of the fire which occurred in the Lewis School while repairs were being made in it during the long vacation.

The following work has been done: Doors have been changed to swing out at the Roger Wolcott and Lowell Schools, and in the building on East Fourth street in South Boston. The ceiling over the furnaces has been protected in the Everett primary; a fire escape has been provided for the old Agassiz; fire extinguishers have been provided in twenty-one schools, and an additional exit has been provided in the fire escape at the Somerset-street School.

Another year the Board expects to continue this work as rapidly as their funds permit, but an even larger portion of the expense of the department will this year be charged against the repair account, and, as pointed out later, it will be seen that, owing to the very large amount of new erection in the last five years, the needs for repairs have increased more rapidly than the amount set aside therefor.

III.

REPAIRS.

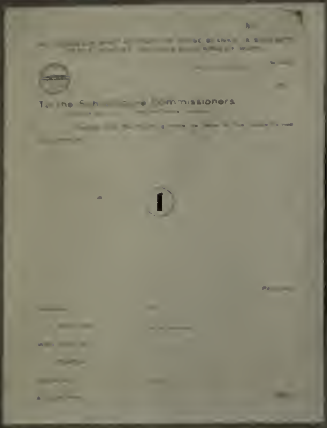
Under the appropriation of 25 cents per $1,000 of assessed valuation $301,700 was available in 1905 for repairs, against which must be charged, according to the Act passed in 1904 (Acts of 1904, chapter 376), the bulk of the expenses of the department, amounting in 1905 to $24,054.69. This leaves $277,645.31, that is, less in 1905 than in 1902, although the city owns now new schools costing over $3,500,000, which were not in existence in 1902. Incidentally the repair account suffered still further in 1905, owing to a fire in the Lewis School, on which the Board was making extensive repairs. It cost $15,666.57 to make good the damage here.

The old buildings, notwithstanding the fact that the majority of the repair money has been spent on them, require each year a large amount if they are to be kept in as good condition as their construction permits, and also meet the constant demand for altered accommodations to suit new requirements. The new buildings, to keep them always in good condition and to prevent depreciation, require constant petty repairs and a steady expenditure on their wood floors and painted walls.

In 1905 the total value of the school buildings in Boston, including those completed before February, 1906, amounted to $12,289,767. The oldest buildings are placed at assessed valuation, the more recent buildings at their actual cost. These may be roughly divided into those of first class construction and those not first class. The first group comprises all the buildings built by the Board and some of the earlier ones. These may therefore be called new buildings. These cost $4,455,667, and on repairs on these buildings $21,837 was spent in 1905. The rest of the school buildings are valued at $7,834,100, and on these $245,148 was spent in 1905. Much of the first amount ($21,837) was spent ou minor equipment and not on actual repair to make good ordinary wear and tear. Half of one per cent. is a small amount for this latter purpose alone, and it is poor economy to build first class buildings and not maintain them in perfect condition. Of the latter amount ($245,148) by far the greater part was spent in actual renewals or major repairs which are essential for the proper conduct of the school work in these older buildings, and very much of this work remains to be done — modern heating and plumbing, fire protection, better exits, good floors, clean paint, new blackboards.

From the above we believe that it must be evident that the amount appropriated for repairs, increasing only according to the increase in assessed valuation, is inadequate to do the work as it should be done, and as it would be done by the business management of similar valuable property; and that no reduction should be made until all the old schools, whose construction would justify the expenditure, have been put in really good structural and hygienic condition.

With the establishment of a new School Committee, whose number is reduced from twenty-four to five, the Board hopes that it will be possible for them to work conjointly in matters



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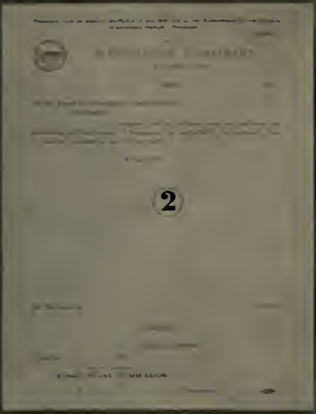
To the Schoolhouse Commissioners



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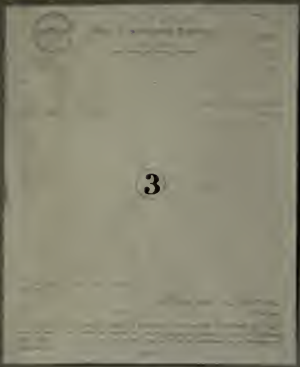
SCHOOLHOUSE DEPARTMENT

SCHOOLHOUSE COMMISSION



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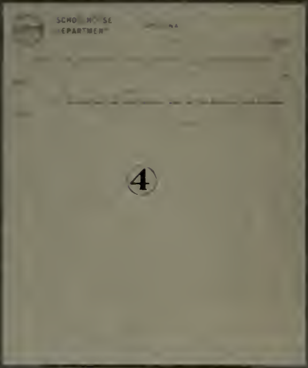

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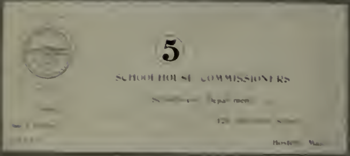
SCHOOLHOUSE DEPARTMENT



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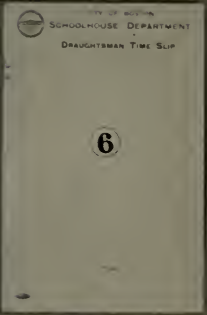
SCHOOLHOUSE COMMISSIONERS

Schoolhouse Department

Boston, Mass.



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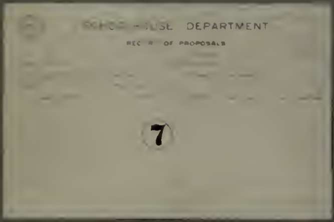
CITY OF BOSTON

SCHOOLHOUSE DEPARTMENT

DRAUGHTSMAN TIME SLIP



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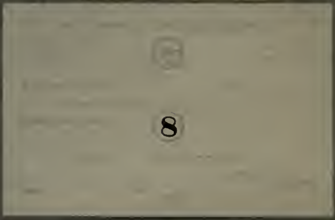
SCHOOLHOUSE DEPARTMENT

RECORD OF PROPOSALS



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that are of common interest; to develop a system whereby petty repairs may be made without the annoyance, delay and expense of the present cumbersome method; to have such regulations as to discipline in the schools, and as to the service of janitors, as shall tend to prevent unnecessary deterioration of buildings; to insure proper care of buildings and grounds when they are used for purposes other than those connected with the day schools. All these are matters that might well be arranged between the two authorities. At present the conditions referred to in the Report of 1904 still exist. The evening schools, vacation schools and educational centres not only require in some cases expenditures for equipment, but are also more apt than the day schools to cause damage in excess of ordinary wear and tear. This work is as important as any educational work undertaken by the city, and there should be no difficulty in organizing these schools as perfectly as the day schools.

In Appendix III. can be found a statement showing how the repairs are distributed in the various schools.

(1.) THE SYSTEM EMPLOYED FOR REPAIR WORK.

When a repair is needed the Master of the school states his request on requisition blank marked 1 (see cut). This is then forwarded by him to the Schoolhouse Commissioners. One of the Commissioners authorizes the work, signing the requisition as indicated; or refuses the request; or else gives the requisition to the Inspector of the district in which the school is located to investigate and report on the same. In case the report is satisfactory the work is authorized; if not, the requisition is rejected. If the work is authorized, blank marked 1 is signed, specifications for the same are written and at least three bids obtained on said work. The specifications are written on or attached to the proposal blank marked 2, unless the work called for is painting, in which case the regular proposal for painting is used, with specifications printed thereon. With the proposal blank is sent to the bidder a permit, marked 8, to secure admission to the school building, in order that the bidder may estimate the cost of the work on the premises. These blanks, together with an envelope, marked 5, addressed to the Schoolhouse Commissioners, are sent to each bidder in the regular office envelope. The blank, marked 7, is then filled out and filed with the Commissioner for reference. The bidder returns the proposal blank and specifications with his estimate on the same, in the addressed envelope, and fills in the name of the schoolhouse and the kind of work in the lower left corner of the envelope. The bids are opened on the day and at the hour specified in the specifications. The lowest bid is usually the one accepted. When the bid has been accepted and the work authorized, the Commissioner signs the blank marked 2, *i.e.*, the proposal, and returns it to the Inspector of the district. The Inspector then fills out in his order book the blank marked 3. This is done in triplicate. One of these sheets is sent to the contractor whose bid is accepted, one is filed with the accepted proposal and specifications, and the third is left in the inspector's order book. When the work has been completed to the satisfaction of the Master, the order sent out to the contractor is returned to the Commissioner, signed in the lower left corner by the Master of the school, expressing his approval of the work. With this the contractor sends his bill marked 4 made out in duplicate. The same number which appears on the order blank in the upper right corner must appear on the bill in the upper left side inside the circle left for the same. The bills are then passed upon first by the Inspector, then by the Secretary and finally by the Chairman of the Board, and, if approved by them, are sent to the City Auditor for payment. The Inspector notes on the order blank left in his book the date and amount of the bill for the work ordered. All of the above applies to work the value of which exceeds $50, and for such work is no more cumbersome than is necessary to insure the necessity of the work, its careful estimating and its satisfactory performance. The same routine, however, necessarily governs the smallest repairs except for the fact that competitive bids are not asked for. The routine is so cumbersome that constantly the first step, the order from the Master, is not taken. The repair may be a broken pane of glass, a break in a water or waste pipe, reported hurriedly by the Janitor of a primary school, perhaps a half a mile away from where the Master is, in his grammar building. The requisition then, instead of being signed by the Master, is signed by the Inspector, and when the order comes back to the Master for his approval of the work done, he is perhaps ignorant that it has even been required or ordered. In regard to such petty repairs, especially those that are of the nature of urgent necessities, the Board believes that a more satisfactory arrangement might be made.

IV.

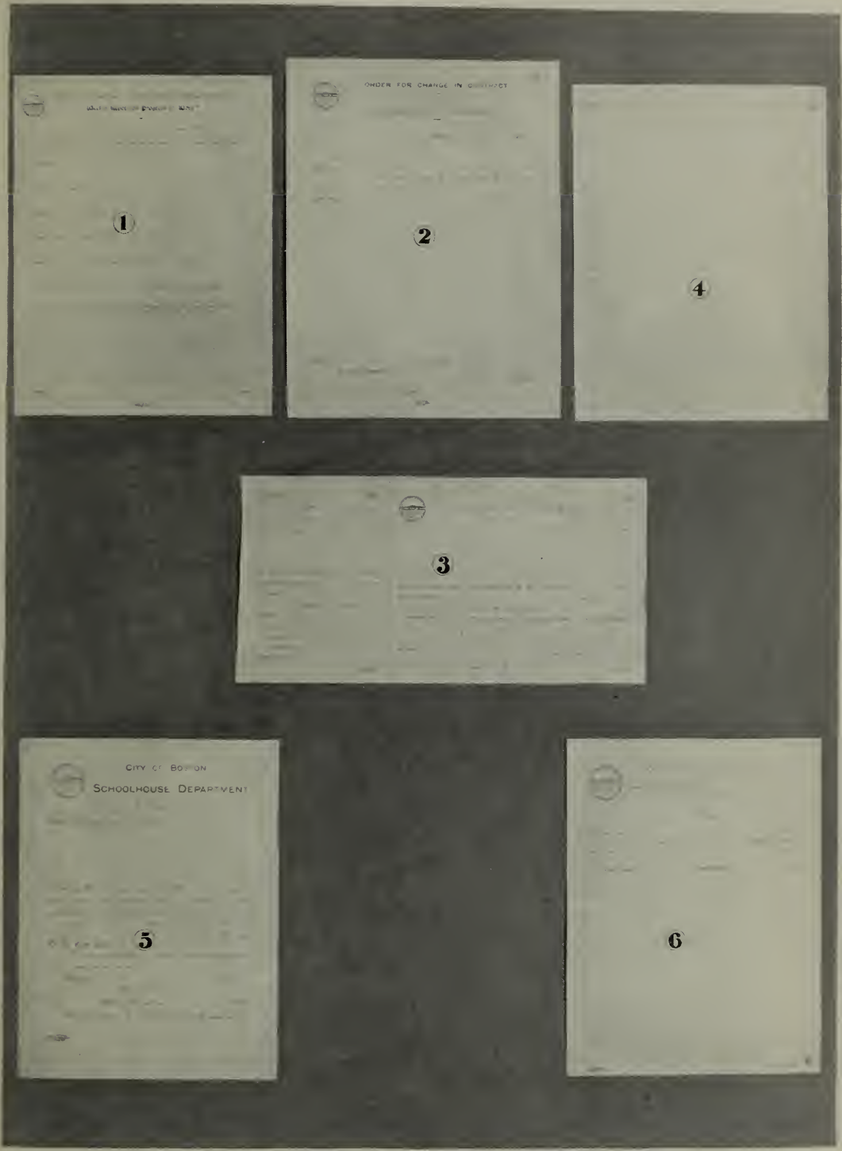
POLICY OF THE BOARD.

In the report of 1904 the Board reported on first, what they considered proper accommodation for children of primary grade; second, the same for the grammar grade (no change has been made on either of these); third, the agreement with architects employed by the Board. This also remains unchanged, but for reference is given in Appendix X.

The establishment of fixed standards for primary and grammar schools, and the gradual development of the specification, which is complete and thorough, has been possible only through the co-operation and support of the Architects employed by the Board. The results of this work have been to eliminate practically altogether the extras which are ordinarily such sources of annoyance to the owner, to the Architect and to the Contractor. The table given in Appendix VII. gives a complete statement of all the buildings erected by the Board, the original contract price, and the final price paid. In three cases, out of twenty-three buildings completed, substantial additions were made, which were really in the nature of supplementary contracts for work not originally included in the first contract. These were the Mather Grammar School, for which a contract was made to finish and complete three class-rooms and a cooking room in the basement at a cost of $12,882.60; the Oliver Wendell Holmes School, where grounds beyond the lines of the original contract, and in connection with an adjacent primary school, were graded, paved, planted, etc., at an expense of $7,620, and the John Greenleaf Whittier Primary School, in which was installed a plant of the Vacuum Cleaner Company, largely for the purpose of experimenting as to whether this method justifies the expenditure by its economy and the thoroughness of results. This cost $2,150. If these three items and the net bonus, $3,121, were eliminated, as in justice they should be, the figures would show that twenty-three buildings were completed for $3,501,293.39, or $13,435.51 less than $3,514,728.90, the amount of the original contracts, showing that there were deductions in excess of the extras. Furthermore, awards on the buildings completed ahead of time, the Board paid $5,220 as bonus, and has deducted as forfeiture for buildings that were late $2,099, with three claims for damages still unsettled, thus showing the constant efforts of the Board to have their work done on time.

In cut form will be found a series of blanks used in connection with new buildings, and which help the Board to follow closely the work on the buildings. When the work is first let, the Contractor is obliged to present to the Architect a schedule, showing how the total amount of his contract is subdivided among the various trades. He is not required to name his sub-contractors on this list, although the Board has the power to inquire into this matter, and sometimes requires the names of the principal sub-contractors on the proposal sheet of the contract, but the list is intended to show how the total amount of his contract is chargeable against the different portions of the work. When he applies for a payment the Architect fills out the form marked 4, and in the right hand lower corner makes a detailed list of the value of the various portions of the work that have been completed, which the Board can check against the list on file, showing how much of each portion of the work is certified as being complete. This application is certified to by the Architect, approved for payment by the Chairman, and the order for a special draft, marked 5, is attested by the Secretary, signed by the Chairman, and sent to the City Auditor to be approved for payment. Notice of the draft is sent to City Treasurer on blank marked 6. To keep a constant written record of the progress of the work not only for the information of the Board, but as a definite record of progress, as it might have a bearing on a decision as to delay, the Board requires from its Architects a weekly report, marked 1. If any changes are required in the work, whether of addition or deduction, the Architect makes out the form, marked 2, in triplicate. In some cases the change may be urgent, and it may not be practicable to state at the time the money value of the change, and whether or not it affects the time for completion, but ordinarily the Architect is expected to fill out in this order the amount to be added or deducted and to state whether or not it will affect the time of completion. If this is approved by the Chairman, all three are signed, two returned to the Architect, one for his own use and one for the Contractor, and the order, marked 3, is made out. This order gives a complete statement of the financial condition of the work, and is signed by the Chairman and by the Mayor, and filed with the Auditor.

The Board is now engaged in studying the high school problem, hoping to be able to put this on the same definite basis as the grammar and primary. In the grammar and primary the School Committee co-operated with the Board in cutting out what they considered superfluous, and the



ORDER FOR CHANGE IN CONTRACT

CITY OF BOSTON

SCHOOLHOUSE DEPARTMENT

Board studied kindergarten, manual training and cooking rooms until they had arrived at what seemed to be an economical standard equipment. The same thing should be done with the School Committee as to high schools. Especially does the Board wish advice as to the size and equipment of laboratories. At present they are equal to many of the best college laboratories. Perhaps this is really necessary, but if it is not, it could be modified at a considerable saving.

At present the requirements of a high school are as follows: In addition to class-rooms studied to take the number of pupils in the school, in single rooms accommodating from thirty-five to forty-two, or double rooms accommodating from sixty to eighty, there would be the following more or less fixed equipment, depending on the size of a class rather than on the number of pupils in the school: Laboratories for chemistry and for physics, and for botany and zoölogy combined; in connection with these laboratories a lecture-room, capable of seating ninety pupils, a drawing-room, a room for handicraft, rooms for household science, a gymnasium, a library, principal's room, reception rooms, and the rooms for the men and women teachers. There would also be the assembly hall and the recitation rooms, the latter of an area of 500 or 600 square feet; the size of the assembly hall and the number of these recitation rooms would depend more or less on the number of children and the number of class-rooms.

The Board has continued its policy as to the conduct of domestic engineering, and has employed a single firm to do all the work, both on new buildings and on the old buildings. The Engineers advise with the Architects as soon as the latter are appointed, and after seeing that the sketch plans are made with due provision for the heat, ventilation and electric work, make the working drawings and specifications on which competitive bids are received through advertisement. They superintend the work constantly during execution and make final tests when it is completed, and see that the janitors who are put in charge are familiar with the plants. The advantages of having the service of a single firm for this work lies in the establishment of uniform standards for gravity or plenum systems, and in having a consistent record of the efficiency of the systems installed. These advantages alone might not justify the Board in not offering to other firms an opportunity to design systems along the lines proved by experience to be best, just as is done in the case of the Architects, but the Engineers perform other services for the Board which could not be performed except by a single firm, that is, the charge of the more complicated problems of heating, ventilation and electric installation in the old buildings.

This requires familiarity with the plant of every school that is heated by boilers. During three and a half years the Engineers have conducted work in or advised the Board in regard to one hundred twenty-five schools out of a total of two hundred twenty-five, and on a number of others reports and examinations have been made, but no work has been carried out. This gives them a familiarity with the problem in the schools throughout the city which is of great value to the Board in enabling it to decide wisely as to the expenditures really necessary.

Incidental to the regular work the Engineers have conducted and are conducting tests of efficiency, tests to determine the desirability of moistening the air in winter (see Appendix VIII.), tests of automatic devices and tests of methods of artificial lighting. This work could be conducted only by a single firm constantly employed.

The Board believes that it has been entirely justified in the past in continuing this policy, but that now that the problems have been thoroughly studied and many of them completely solved, it is competent to carry on this work in its own department, provided it has the expert assistance of men who are familiar with the work that has been done during the last four years by the domestic Engineers, and are familiar with the schools of the City of Boston. Such men, working under the direct supervision of the Board, should be able to do the drawing and specification writing connected with the new buildings, which will not in the future be erected in such numbers annually as they have been in the past, and they will also be able to give even more continuous attention to the tests of efficiency which the Board considers it most desirable to continue.

With the establishment, January 1, 1906, of a new School Committee, a body of five men, who must necessarily be more independent and more judicial in their action than the old Board of twenty-four, and who will, perforce, be guided by the expert knowledge of those in charge of the educational and material sides of the school problem, that is, the Superintendent and Supervisors on the one hand, and the Board of Schoolhouse Commissioners on the other, it is to be hoped that a harmony of action may follow as a matter of course. According to the act establishing this Board, it was given certain powers which seem more naturally to belong to the educational department, and the Board in deciding such matters has tried always to govern itself by the opinion of the Superintendent of Schools.

For example, the Board was obliged to determine what school buildings were required prior to 1902. This was a matter about which the Superintendent and Board of Supervisors might be expected to know more than the Board of Schoolhouse Commissioners. The list was made in conference with the Superintendent and the School Committee. The final decision in this, as in the matter of accommodation in each school, or the plan or construction of a school, rested wholly with the Board, subject only to the "written opinion" of the Superintendent of Schools. The Board has its own Inspectors, and from the nature and scope of its work is now as familiar with the questions of accommodation and growth of school population as is the Superintendent through his Board of Supervisors, but not more so, yet it is practically empowered to decide these questions. On the other hand, the determining of the bounds of school districts, a matter closely allied to accommodation and new buildings, is left wholly in the hands of the School Committee, who have never hitherto consulted the Board in making changes, or even advised it in advance when such changes were contemplated.

The Board is obliged to find accommodations for school children, but the School Committee have power to grant transfers for children of grammar grade, while children of primary grade are given their choice as to the school they attend. High school pupils also may choose. In this way the Board constantly finds that it is unable to relieve a crowded school by transfers to other schools where there is room.

It has been the theory both of the School Committee and of this Board that primary schools should be small and many, so that any given district will be served without necessitating long walks for little children. It has not always been found practicable to do this. Large primary schools have been erected with a view to relieving crowded conditions extending over a large area, and then it has been found difficult to relieve the small crowded schools, and force the children to walk a long distance to the new school.

In these and in many other matters the educational and material authorities should work closely together.

V.

GENERAL DEDUCTIONS.

Last year the Board summed up the requirements for its primary and grammar buildings. Repeated very briefly and with short revision they are — all buildings fireproof (so-called, first class construction) throughout; cost limited by allowing from 30,000 cubic feet for a large primary to 35,000 cubic feet for a small primary, and 22 cents per cubic foot; by allowing a sliding scale of cubic feet per class-room for grammar (given on p. 14) and 22 cents per cubic foot; common red brick and stone for the exteriors, and the smaller the building the less the ornament; the grounds outside the building from 25 to 40* square feet per pupil, to contain playgrounds, planted spaces and gardens, and to be as open as possible for daily use; to this one may add the experimental figures for estimating cost of high schools, varying from 82,000 cubic feet per class of forty in a small high school to 66,000 cubic feet per class of forty in a large building, and the addition of 2 cents to the cost per cubic foot, making it 24 cents for the high schools.

The general information now given covers primary, grammar and high schools. The latter may be revised another year in the light of further study.

GENERAL INFORMATION FOR FIRST CLASS CONSTRUCTION.

PRIMARY AND GRAMMAR SCHOOLS.

SCHOOL-ROOMS. (1.) *Size* will be 24 by 30 Primary and 26 by 32 Grammar and not less than 13 feet in clear. Modification allowable only after consultation with the Board. Every room shall be numbered on the plans to designate it.

(2.) *Windows* will be on the long side for left hand lighting. The glass shall contain not less than $\frac{1}{5}$ of floor area, about 160 square feet for a room 24 feet wide; † neither double run of sash nor double glazing will be required, but a dust-proof weather strip; the head square and close to the ceiling; the sill about 2 feet 6 inches from floor: the windows divided with muntins, no large sheets of glass. Finished with plastered jamb, no architrave, metal corner bead.

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* In the last report 25 feet was mentioned as a reasonable limit. In outlying districts, where land is cheap and the school buildings small, as much as 40 feet may be given.

† It is evident that if this area of glass is requisite to light a room in a building with free space about it, such for example as the Sarah J. Baker School, it is inadequate for a room in a building situated, like the Christopher Columbus, on a narrow street. Under exceptionally free conditions, with no obstruction to the direct light from the sky, it is possible that the area of glass might be reduced, but it appears to be no more than enough for the ordinary conditions of the new buildings, and should be increased if possible for such situation as that of the Columbus.

(3.) *Doors.*—One to corridor, 3 feet 6 inches by 7 feet, partly glazed, to open out, placed preferably near the teacher's end: brass-plated steel butts, 3 lever mortise lock, master-keyed; cast-brass knobs, marble thresholds to fireproof corridors. Doors to have 2-inch plain brass numbers and cardholders 3½ inches by 5 inches.

(4.) *Floors* will be Georgia pine rift, or maple.

(5.) *Walls* will be painted burlap up to top of blackboards or of tack boards, and above this plaster, tinted in water color; the blackboards 4 feet high: 2 feet 2 inches (in Kindergarten), 2 feet 4 inches to 2 feet 6 inches from floor in Primary and 2 feet 6 inches to 2 feet 8 inches in Grammar. Behind the teacher and on one long side in Primary, and behind the teacher on long side and end in Grammar and High. These will be of best black slate, ¼-inch thick. In Primaries a rack or tack board for holding cards is required above the blackboard. A picture moulding at top of burlap and also near ceiling in both Primaries and Grammars. (See drawings.)

(6.) *Ceilings* will be level, plaster, no paint nor tint.

(7.) *Lights.* — Six groups of four lamps each and light for teacher's desk; electric, no gas.

(8.) *Heating and Ventilation.* — The inlet for heat about 5 square feet, the outlet for ventilation about 5 square feet for gravity system and 3 square feet for fan.

(9.) *Bookcase.* — Provide a bookcase in any convenient position, capable of containing 300 octavo volumes: upper doors fitted with pin tumbler locks, and latch and knob; drawers fitted with pin tumbler locks. Lower doors to have pin tumbler locks; same lock in each bookcase; all bookcase locks master-keyed. (See drawing.)

(10.) *Map Supports.*— Provide one map support for each class-room in Grammar Schools, preferably behind the teacher's desk or opposite the windows, fixed close to the ceiling. (See drawing.)

(11.) *Teacher's Closet.* — Provide a small closet for teacher's coat and hat, preferably opening from the class-room, but allowable from the wardrobe.

WARDROBES.

(1.) *Size.* — Wardrobes will adjoin school-rooms and be from 4 feet 6 inches to 5 feet wide.

(2 and 3.) *Windows and Doors.* — Outside light; two doors, both connecting with school-room and not to corridor, and having no thresholds. Doors, double swung, 2 feet 6 inches wide, brass double acting butts, foot and hand plates, hooks or adjustable stops to hold open, ventilation under door farthest from vent.

(4.) *Floors* as in school-rooms.

(5.) *Walls.* — Painted burlap up to hook rail; poles on brass-plated iron brackets with hooks under and pins over, 56 in number. Shoe-rack and umbrella clip below. (See drawing.) Walls above, plaster, tinted. Height of lower pole, Kindergarten, 30 inches from floor; Primary, 36 inches to 40 inches; Grammar, 44 inches, 48 inches and 52 inches; distance between poles, 8 inches for Primary and Grammar, 12 inches for High Schools.

(6.) *Ceiling.* — Plaster. No tint.

(7.) *Light.* — One lamp. Ceiling outlets, electric.

(8.) *Heating and Ventilation.* — Heating, direct. Ventilation, direct, 1⅔ square feet area across section.

CORRIDORS AND VESTIBULES.

(1.) *Size.* — Not less than 8 feet wide for four rooms on a floor; not less than 10 feet for over four rooms, governed by length, access to stairs, etc.

(2.) *Windows.* — Outside light essential.

(3.) *Doors.* — Outer doors to open out, heavy butts, standard, master-keyed, school lock; door check; heavy hooks to hold open. Vestibule doors open out, heavy butts, pulls, push plates, hook to hold open, door checks, no locks.

(4.) *Floors.* — Tile, terrazzo or granolithic.

(5 and 6.) *Walls and Ceilings.* — Painted burlap, 7 feet high, untinted walls and ceilings. Finish burlap with painted line or a dado cap, and put picture moulding at ceiling in corridors.

(7.) *Light.* — Ceiling lights, two lamps each, electric, also gas for emergency in corridors, on stairs and in vestibules.

(8.) *Heating and Ventilation.* — Heat, direct. Ventilation, none.

(9.) *Sinks and Closets.* — On each floor above the first one or two 4-foot sinks and emergency closets; one for boys and one for girls.

STAIRCASES. (1.) *Number and Arrangement.* — Determined by building laws, but fireproof construction in all cases.

(2.) *Material.* — The treads, North River stone on iron string, or concrete construction with granolithic surface. Rails of a simple pattern, easily cleaned; wall rails not necessary.*

(3.) *Steps.* — About 6½ or 7 inches by 10. Rail not less than 2 feet 8 inches on runs and 3 feet on landings.

SANITARIES. (1.) *Size.* — General toilet-rooms in basement, in size approximating space for 3 water-closets for each school-room, two girls', one boys', and 36 inches of urinal for every school-room, arranged for convenient supervision and circulation. Slate sinks, length from 10 inches per class-room in small buildings to 6 inches per class-room in large buildings, located preferably in the play-rooms. In large schools the number of closets may be considerably reduced, especially on boys' side. The above refers to mixed schools.

(2.) *Windows.* — Ample outside light; glazed where exposed to view outside with factory ribbed glass.

(3.) *Doors.* — The doors arranged "in" and "out," with spring or door check and stout brass hooks to hold open; glazed with ripple or ribbed glass; half-doors to water-closets except where ordered omitted.

(4.) *Floors.* — Asphalt. Boys', drained to urinal, girls' to floor-wash.

(5.) *Walls.* — Salt-glazed brick, or other non-porous, inexpensive surface, 7 feet high; above, brick painted.

(6.) *Ceiling.* — Untinted plaster or white-washed concrete. No basement ceiling need be furred level.

(7.) *Light.* — Ceiling lights in groups of three lamps.

(8.) *Heat and Ventilation.* — Heat direct. Ventilation through fixtures back of urinals, and 10 square inches local vent from each water-closet.

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* In many schools the children are required to file in the centre of the stairs and to keep away from the walls. Where this is the rule a rail on the wall appears needless.

MASTER'S AND TEACHERS' ROOMS.

(1.) In each grammar school a room of abou 240 square feet for the master, with a water-closet and bowl and a book-closet adjoining. This room should be near the centre of the building, *i.e.*, on the second floor in a three-story building. In all schools, a room or rooms for teachers, averaging about 300 square feet for ten teachers, with one water-closet and bowl for each ten.

(2.) Where men as well as women are teachers, a separate small room with toilet accommodations for men.

(3.) Opportunity in teachers' rooms for warming luncheon, either gas or electric, unless there is a cooking-room in the building.

PLAY–ROOMS.

(1.) All free basement space to be arranged as play-rooms for boys and girls. Salt-glazed brick, 7 feet high, and painted or whitewashed brick or stone walls above. Asphalt or cement floors, plaster ceilings or whitewashed concrete.

PLUMBING FIXTURES.

(1.) *Water-closets.* — The basement water-closets for primary and grammar schools are short hopper closets; elsewhere, a heavy wash-down closet. (See drawing.)

(2.) *Slate Partitions.* — Supported at ends with iron pipe about 8 feet high, tied together and to the wall, to which doors are hung. (See drawing.)

(3.) *Urinals.* — The urinals will be of slate, floor slab, trough and back, without partitions, flushed automatically through ⅞-inch perforated pipe, with hot and cold water; vented at bottom into space behind. (See drawing.)

(4.) *Sinks*, of black slate, self-closing cocks, set 15 inches on centres, and cup-hooks at each side of cocks.

(5.) *Floor-washes* in sanitaries, as already mentioned. (See drawing.)

(6.) *Piping.* — (*a.*) Cast iron, must be in trenches in basement, running trap with direct indirect fresh-air inlets, clean-outs at every change of direction. Soils and vents exposed as far as possible, no asphaltum, but oil-tested, red lead and three coats paint.

(*b.*) *Supplies.* — Exposed as far as possible; where covered may be lead, elsewhere brass, no nickel-plate. Hot water for janitor's use in basement; for urinal, cooking-room, and, if convenient, for master's and teachers' rooms. Supply from boiler and from summer boiler, if any, or from a gas heater, or from cooking-room range.

(*c.*) *Fire Lines.* — In first class buildings over 3 stories high, one or more lines of 3-inch pipe.

SPECIAL ROOMS.

ASSEMBLY HALLS.

(1.) Assembly halls should accommodate the whole number of pupils in smaller grammar buildings, but it is not customary in the larger schools to seat over 800 or 900. The platform should be capable of accommodating one, or, in the large schools, two classes, and should have removable stepped platforms of wood to take the benches. Galleries may be used where the hall is two stories in height. Anterooms near the platform are desirable, and a connection from adjoining class-rooms to the anterooms or directly to the platform. A dignified architectural treatment of the walls and a studied color scheme is expected. The hall floor will be level. The lighting and acoustics should be such as belong to a small lecture hall.

MANUAL TRAINING ROOMS.

(1.) *Size.* — Room, generally located in basement, should be approximately of dimensions equivalent to a class-room and its wardrobe, preferably a corner room; and arrangement, shown by drawings, for number of benches there given, 28.

(2.) *Light.* — The windows should be as near full length as possible and on two adjacent sides. Artificial light should be provided in six groups of four lamps, as in class-rooms or individual light for each desk. This latter is preferable where the occupation of room for manual training is permanently fixed.

(3.) *Heat.* — Heat and ventilation the same as in class-rooms.

(4.) *Stock-room.* — Stock-room should contain at least 80 square feet, preferably long and narrow. Two 18-inch shelves should run around the room, 5 feet 6 inches and 6 feet from the floor.

(5.) *Wardrobes.* — Wall space for 30 hooks, not necessarily a separate room.

(6.) *Teachers' Closet.* — Teachers' closet should be large enough to be used also for storage of finished work, and should be fitted with all shelving possible as well as with the customary coat-hooks. An area of 40 square feet is adequate.

(7.) *Bookcases.* — Like those in class-rooms.

(8.) *Blackboards.* — Blackboard space of about 30 running feet, 4 feet high.

(9.) *Workrack.* — About 28 feet long, 6 feet 6 inches high, and 2 feet deep.

(10.) *Washbowl.* — A 3-foot sink is a convenience, but not a necessity.

(11.) *Finish of Room.* — A basement room should be finished as a shop; salt-glazed brick up to 7 feet where exposed, and above, brick walls whitewashed; if above the basement, finished as a class-room. The floor is of wood.

(12.) *Furniture.* — (Not included in the building contract.) The furniture comprises 28 benches and stools, 4 display frames about 6 feet long and 30 inches wide, demonstration steps and guard rail, teacher's desk, table 4 feet by 2½ feet with unfinished top, one desk chair and two common chairs. (For all of these see drawings.)

COOKING–ROOM.

(1.) *Size.* — Should have an area equivalent to class-room and its wardrobe, preferably a corner room.

(2.) *Light.* — As much light as a class-room, but not necessarily left hand; if located in a corner, light from two sides. Artificial light as in a class-room.

(3.) *Heat.* — Less heat is required than in a class-room, but the ventilation should be the same, with additional vent from the demonstration ranges.

(4.) *Wardrobes.* — Provision for 28 pupils, clothes hooks in separate lighted closet and small teacher's closet.

(5.) *Interior Finish.* — Above basement, similar to school-rooms, blackboards 4 by 10 feet, back of teacher's desk. Walls and ceilings painted in oils. A basement room may have salt-glazed brick walls up to 7 feet and whitewashed brick above. The floor of wood.

(6.) *Tile.* — The floor space occupied by the ranges and the wall space back of them (include sides if in recess) to a height of 7 feet, unglazed red tile or salt-glazed brick. (For all this see drawings.)

(7.) *Fittings.* — (*a.*) *Work Benches*, accommodating 28 pupils, fitted with compartment for utensils, bread board, etc., a Bunsen burner with a hinged iron grill over it, set on aluminum plates at each station; benches arranged in the form of ellipse, or oblong, with access to centre from two sides; top of pine 26 inches wide; open underneath and supported on pipe standards. One section detached and fitted as a demonstration bench; a clear space of 4 feet all around. Dining table (furnished under another contract) is to be set in centre. (See drawings.)

(*b.*) *Dresser.* — Ten feet long, in 3 sections, 4 adjustable shelves and glazed sliding, or hinged, doors at top; one set of 3 drawers and 2 cupboards on lower part.

(*c.*) *Fuel-box.* — In 2 compartments, each about 24 inches square and 30 inches deep, with hinged lids; small shelf in one section. Buildings having cooking-rooms should have special accommodations in the main coal-room for a supply of range coal and kindling wood.

(*d.*) *Bookcase.* — Similar to those provided in class-room.

(*e.*) *Sink.* — Soapstone, 5 feet long; 2 cold and 2 hot-water cocks; drip shelves 24 inches long at each end of sink. Sinks should be near ranges.

(*f.*) *Hot-water Boiler.* — (See instructions in plumbing.)

(*g.*) *Coal and Gas Ranges.* — A six-hole coal range and a similar gas range with hood provided and set on a hearth previously mentioned.

(*h.*) *Refrigerator.* — Will be a part of the furniture. Furnished under another contract.

KINDERGARTEN.

(1.) *Size.* — The rooms can be contained in the space of a class-room and wardrobe, but a slightly larger area is desirable. They comprise a large room, a small room, a supply closet, wardrobe, teachers' closet and a water-closet and bowl or sink.

(2.) *Light.* — Windows should be as in a class-room, if on a corner, on both sides. Exposure should be sunny. Artificial light of the class-room type, arranged for the different rooms.

(3.) *Heat.* — Heat and ventilation as in class-rooms.

(4.) *Large Room.* — The large room should take a 16 foot circle, regulation lines painted on the floor, with at least 4 feet all around it when doors are open into small room.

(5.) *Bookcase and Blackboard.* — Like a primary class-room.

(6.) *Small Room.* — About 200 square feet, with a blackboard opposite window, and wide doors opening into large room.

(7.) *Wardrobe.* — Hooks for 60. Arranged as in ordinary wardrobes.

(8.) *Teachers' Closet.* — For clothing of two or three teachers.

(9.) *Toilet-room.* — With seat and bowl or sink.

HIGH SCHOOLS.

CLASS-ROOMS. High school class-rooms are laid out for classes of 36 or 42, generally the latter. A standard grammar class-room, 26 feet by 32 feet, will accommodate 42 high school desks. The large class-rooms are to accommodate from 60 to 80 pupils; the larger number can be accommodated in a room 33 feet 8 inches by 43 feet.

LECTURE-ROOM. (1.) *Size.* — Area to depend on number of seatings required or number of pupils in classes; should be large enough for two classes and should occupy a position between the laboratories for physics and chemistry.

(2.) *Light.* — As much glass area from the rear as possible.

(3.) *Heating and Ventilation.* — In the same proportion as for class-rooms.

(4.) *Equipment.* — Fitted with demonstration table adapted to experiments both in chemistry and physics, containing drawers, locker, a pneumatic sink at end, supplied with hot and cold water under reduced pressure, and cold water under street pressure for quick filling; steam supply direct from boiler main with a by-pass to summer boiler; gas hose connection, gas air suction, and two forms of electric current — first, a direct current of 110 volts; second, a direct current with a range from 0 to 10 volts. A stereopticon with a reflectoscope and connections. These currents should be controlled under table. Over demonstration table, secured to ceiling, provide a plank with heavy screw hooks. Provide a hood with exhaust ventilation. Behind lecture table provide sliding blackboards and a canvas curtain on a heavy spring roller for attaching charts. Provide a screen at side of room for stereopticon projections, the size to depend on distance and lenses used. Hang black opaque curtains over each window, sash, door glass, and skylight, for complete cutting out of all light when they are drawn. Control the artificial lighting of room at demonstration table. Lifting seats with desk for taking notes, arranged on platforms, so that the successive rows will rise one above the other to insure an unobstructed view of demonstration table.

CHEMICAL LABORATORY.

(1.) *Size.* — About 30 by 40 feet; preferably a corner room.

(2.) *Light.*—As for class-rooms, about one-fifth of floor area.

(3.) *Heating and Ventilation.* — On same general basis as for class-rooms, with additional provision for exhaust ventilation from hoods.

(4.) *Walls and Ceiling.* — Wall of brick painted, or some light colored brick, or plastered with some hard variety of cement. Where walls and ceiling are painted, zinc white should be used.

(5.) *Floor.* — Wood laid on two thicknesses of waterproof paper.

(6.) *Furniture.* — Lid arm chairs, grouped in front of demonstration table.

(7.) *Equipment.* — Pupils' work tables, fitted with sink, a soapstone trough in centre of table, with standing overflow waste, to fill trough for pneumatic experiments. Table top of white pine stained with aniline hydrochlorate. A glass shelf for reagents above the sink, on bronze standards. Each pupil's station provided with hot and cold water, main supply to each table controlled by a valve for reducing the pressure. Gas hose-cock terminals and double electric plug terminals, with a voltage ranging from 0 to 10. Two drawers with cupboard under, in sections 18 inches long; an individual drawer reserved for each pupil with lock and key and master-keyed. Four pupils use each cupboard in common. Each third cupboard is left open for an earthen jar. At side of room a slate shelf, 24 inches wide, provided for ten advanced pupils. A small, portable, copper, steam bath, fitted with concentric rings, vented into exhaust ventilation from hoods. A drying oven of copper, heated by an electric radiator at bottom, vented to roof. Large general sink, with shelves at each end, supplied with hot and cold water under reduced pressure, and cold water under street pressure. Demonstration table, similar to one specified for lecture-room, 7 feet by 2 feet 9 inches by 2 feet 8 inches high. To have gas, electricity, steam and blast apparatus fittings, like those for table in lecture-room. Blackboards to be back of demonstration table, to be a sliding blackboard, similar to one in lecture-room. About 15 linear feet of slate blackboard on wall to be provided for pupils' use. Shelves 4 or 5 inches wide to be constructed on walls, of wood, with glass tops for bottles.

APPARATUS ROOMS AND TEACHERS' LABORATORY.

(1.) *Size.* — About 300 square feet of area, adjoining chemical laboratory, connecting directly with laboratory and lecture-room.

(2.) *Light.* — Ample outside light.

(3.) *Equipment.* — Furnished with ample drawers and lockers in lower section and enclosed cases above. A slate shelf for a chemical balance. A work table, with hot and cold water through a combination goose-neck hose-bibbed cock. Gas hose terminals, the two forms of electricity specified for demonstration table, and sink about 24 inches square and 10 inches deep, drawers and cupboard underneath. Bookcase for reference books on chemistry. One gas outlet.

DARK ROOM.

(1.) *Size.* — Any available space, about 10 by 15 feet, entered through a vestibule.

(2.) *Equipment.* — Fitted with a wall bench and case of drawers, sink 4 feet by 2 feet by 8 inches deep, with drip shelves at ends. Slate shelves over sink for draining plates. Gas and electric outlets on wall bench, and ruby lantern.

PHYSICAL LABORATORY.

(1.) *Size.* — 30 by 40 feet.

(2.) *Light.* — The same basis as for schoolrooms, one wall having as direct a southern exposure as possible for *porte lumière* studies.

(3.) *Heating and Ventilation.* — On same general basis as for class-rooms.

(4.) *Furniture.* — Provide adjustable stools for all the tables and a sufficient number of tablet arm-chairs to accommodate the entire division during the demonstration exercises. Chairs to be placed in the rectangle formed by the pupils' tables and demonstration table.

(5.) *Equipment.* — Provide at least 6 tables to accommodate at least 4 pupils to each table. To be built of hard wood, cherry tops, fitted with 4 drawers, supports and adjustable crossbar, 4 electric and gas hose-cock outlets. At wall provide a slate shelf, supported on heavy wrought-iron brackets. The full length of one side of room against windows fitted with at least 10 hose-bibbed, goose-necked cocks for cold water under reduced pressure, with movable, planished, lined copper pans connected with a funnel-shaped waste, connected into a common waste pipe, trapped at end of table on slate riser of shelf. Provide for each pupil gas, hose-cock and electric binding posts with a voltage from 0 to 10 volts for each pupil. Fit to window on south side a special wood shutter, painted black and adapted to receive a *porte lumière*, and fit windows, doors and skylight with opaque curtains as described for lecture-room. Demonstration table as described for chemical laboratory. General sink, 20 inches by 48 inches by 8 inches. Two cold water cocks, one under reduced pressure and one under street pressure, hose-bibbed and fitted with aspirator. Blast apparatus at end of demonstration table.

BOTANICAL AND ZOOLOGICAL LABORATORY.

(1.) *Size.* — About 30 by 40 feet, preferably a corner room, with southeast exposure.

(2.) *Light.* — On the basis of three-tenths of the floor area.

(3.) *Furniture.*—Forty-two adjustable screw revolving chairs.

(4.) *Equipment.*—Twenty-one pupils' tables, 54 inches by 24 inches by 30 inches high, each to accommodate two pupils, to have plate glass tops; windows hung with light gray shades at top and green shades at bottom. Marble sink 120 inches by 30 inches, accessible on all sides, divided transversely into two parts, 72 inches and 48 inches, respectively; the 72-inch section 10 inches deep, and the 48-inch section 18 inches deep. Waste for each end. Supplies with hot and cold water, about 6 bibbs, quick fillers for 48-inch section. One aquarium 48 inches by 36 inches, with supply, standing waste and draw cock. Ice chest, 36 inches by 24 inches. Cases built wherever practicable. Three sections to contain 42 pigeon holes, 3 inches by 3 inches by 8 inches, for storage of instruments. A liberal supply of cases to contain drawers and cupboards in lower compartment, and shelves above for exhibition of specimens, storage of material, instruments, books, charts, etc.

TEACHERS' LABORATORY AND APPARATUS ROOM.

(1.) *Size.* — About 300 square feet of area, adjoining chemical laboratory, connecting directly with physical laboratory and lecture-room.

(2.) *Light.* — Ample outside light.

(3.) *Equipment.* — To be provided with a liberal supply of drawers and cupboards in lower sections, and cases with adjustable shelves enclosed with glass air-tight doors. Work tables 60 inches by 24 inches, with two drawers, heavy maple tops, iron vise, 2 gas outlets. Sink, 24 inches by 24 inches by 12 inches.

GYMNASIUM AND DRILL HALL.

(1.) To be used in common for gymnasium exercises, athletic games, and the drilling of the school cadets. On account of its size and for structural conditions, to be generally located in the basement, directly under the assembly hall, with clear span of ceiling and combined height of basement and first story, with visitors' gallery generally provided, but not essential, at one end at same grade and entered from first floor.

(2.) *Size.* — The classes exercising in the gymnasium are generally about 50, and a suitable floor space for this number and a full company of cadets at drill is from 3,000 to 3,850 square feet. The height should be not less than 24 feet.

(3.) *Light.* — Ample outside light in all cases.

(4.) *Heat and Ventilation.* — The former sufficient to guarantee a temperature of about 60 degrees, and about twice as much ventilation as is customary for the ordinary class-room. This is, of course, insufficient for the number of people who might occasionally occupy the gymnasium for exhibitions, but it is more than enough for the ordinary number using it for class exercises.

(5.) *Equipment.* — The gymnastic apparatus consists of the following fixtures, which are slightly modified in the different schools :

2 Booms.
6 No. 915 bar saddles.
16 No. 920 sections bar stalls.
16 No. 927 bar stall benches.
12 No. 551 climbing ropes.
2 No. 554 inclined ropes.
1 No. 930 vertical ladder.
6 No. 940 rope ladders.
1 No. 625 buck.
1 pair basket ball goals.
3 regulation basket balls.
2 5 by 6 mats.
2 5 by 15 mats.
6 pair 1½ lb. Indian clubs.
40 pair ¾ lb. Indian clubs.
1 slanting ladder.
6 No. 667 balance beams.
1 pair No. 671 jump standards.
8 No. 13 chest weights.
1 No. 377 horizontal and vaulting bar.
1 pair No. 846 parallel bars.

2 No. 662 jump boards.
6 No. 700 travelling rings.
1 pair No. 720 flying rings.
1 No. 595 spirometer.
1 No. 593 shoulder caliper.
2 medicine balls.

(6.) *Gun Racks.*—Racks for holding the guns carried by the cadets should be provided on wall.

(7.) *Special Rooms.* — Adjoining gymnasium and drill hall two small rooms about 10 feet square should be provided for school matron and director of gymnasium.

(8.) *Dressing Rooms, Baths, and Lockers.* — (*a.*) In the high schools under construction the Board is experimenting with the following system, which has been tried with success in many outside gymnasiums. This consists in keeping all the clothing of all the pupils in a central locker room, each set being numbered and all being under the control of the attendant in charge. Dressing rooms are provided in a number equivalent to the number of a class. A class coming for exercise is given their gymnasium clothing and the key to a dressing-room, which they lock behind them when exercising. Returning, they can be given the opportunity to take a shower bath in a large room fitted with individual showers, arranged in three banks for different temperatures, all turned on at once by the attendant if a class as a whole is bathing. Returning, the class give up the keys, but leave their gymnasium clothing to be gathered up by the attendant. The clothing is carried to the dry-room, and when dried each set is put back in its proper pigeon hole.

(*b.*) The locker room contains pigeon holes, 10-inch cube, one for each pupil in the school, contained in a room completely controlled by the attendant. Beside this there is a counter over which to deliver the clothing, and adjoining this the dry-room capable of being heated to a high temperature and thoroughly ventilated.

(*c.*) The dressing rooms are small cabins, about 3 feet square with a locked door, a seat and hooks. The shower baths are 3 feet square, divided by slate partitions, similiar to those for water-closets, each having a bath at the front, over which a cotton sheet can be dropped. Each compartment has two sprays in opposite corners.

HANDICRAFT ROOMS.

(1.) This work in high schools corresponds with and is a continuation of the manual training work in grammar schools.

(2.) *Size.* — A space 30 by 40 feet appears to be ample for this work.

(3.) *Light.* — As for a class-room.

(4.) *Equipment.** — Twenty-eight of the 36-inch manual training benches, fitted with two vises. Teacher's demonstration bench; clay modelling boards; wall bench, fitted with iron vises and tool drawers and racks; gas hose-cock terminals above bench; buffer, grind-stone, lathe, sewing-machine for leather work — these four run by power; gas blast-burners and blow-pipes for annealing metals; drill and punch and metal-beating anvils. Under consideration for future installation, mechanical equipment operated by power, wood-turning lathe, four metal-turning lathes, small circular saw, etc. Cases for work in process, instruments, etc. Room for the storage of lumber and supplies.

HOUSEHOLD SCIENCE.

(1.) *Size.* — The space should be approximate to that of a large class-room, intended to seat about 80 pupils, that is in the neighborhood of 30 by 40 feet, and this space should accommodate the kitchen, two small rooms for showing the care of a dining-room and of a bed-room, and a china-closet and pantry.

(2.) *Light*, *Heat*, *etc.* — The same as that for other rooms, with additional ventilation in the kitchen.

(3.) *Equipment.* — The kitchen to contain the same equipment as that for grammar school cooking-rooms, but for 24 stations only; a kitchen pantry fitted with shelving and a china closet fitted with a sink; drawers, cupboards, and shelves enclosed with glass doors. The dining-room and bed-room simply finished rooms having no equipment except the furniture.

DRAWING–ROOM.

(1.) *Size.* — The size should be about the area of a large class-room, and is preferably divided into two drawing-rooms with a work-room between.

(2.) *Light.* — Light preferably from the north. This is not a necessity except for the room in which drawing is done from models.

(3.) *Equipment.* — Will include cases for drawing boards, for models and stock, and a book case, the details of which are given in Appendix XII., a small sink, with hot and cold water.

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*This equipment, while recommended by the authorities, has not as yet been given any final test, and is subject to considerable modification.

LUNCH-ROOM.

(1.) The lunch-room equipment in high schools will depend largely upon the location of the school. If the pupils come from a distance and a large proportion of them stay for the noon hour, the Board puts in a lunch counter, equipped so that simple food can be served hot. This is generally managed by arrangement with outside caterers.

LIBRARY.

(1.) A space equivalent to a small class-room is ample for library purposes. The book accommodation will depend somewhat on the size of the school. The library is planned as a reading-room, that is, with the books in the room and not in the separate class-rooms.

WARDROBES.

(1.) In high schools a common wardrobe is advised for all the clothing, situated on the lower floor to avoid bringing dirt into the upper floors. There being an attendant on the lower floor the room as a whole can be locked up.

(2.) *Light.* — The room should have outside light.

(3.) *Heat and Ventilation.* — It should be thoroughly well heated and ventilated.

(4.) *Equipment.* — The poles, hooks etc., will be similar to those used in the other schools.

HEATING, VENTILATION AND ELECTRIC SYSTEMS.

HEATING AND VENTILATION GRAVITY SYSTEM.

(1.) *Heat-ducts for School-rooms.* — (*a.*) *Size.* — Allow about one square foot are across section for each nine occupants.

(*b.*) Location in a corner room to be within 10 feet of outside wall.

(*c.*) Location in a room with one outside wall to be on inside wall near middle.

(*d.*) Bottom of opening to be about 8 feet above floor.

(*e.*) Opening to be same area as duct.

(*f.*) Opening will be provided with $\frac{7}{8}$-inch ground and galvanized iron.

(*g.*) Galvanized-iron deflectors painted to match walls will be placed in each opening.

(2.) *Vent-ducts for School-rooms.* — (*a.*) *Size.* — Allow about one square foot area cross section for each ten occupants.

(*b.*) Location in a corner room at inside corner of room, and where possible on same wall as heat-duct.

(*c.*) Location in a room with one outside wall to be on inside wall near middle as possible.

(*d.*) The opening will be full size of vent-duct.

(*e.*) The floor will be carried into the bottom of duct and baseboard carried in around. The inside of duct to be finished to match adjoining wall.

(*f.*) No guard will be installed.

FAN SYSTEM.

(1.) *Heat-ducts for School-rooms.* — (*a.*) *Size.* — Allow about one square foot area cross section for each fourteen occupants.

(*b.*) Location in a corner room to be within 10 feet of outside wall.

(*c.*) Location in a room with one outside wall, to be on inside wall near middle.

(*d.*) Bottom of opening to be about 8 feet above floor.

(*e.*) Opening to be one-third larger than area of duct.

(*f.*) Opening will be provided with ⅞-inch ground and galvanized iron.

(*g.*) Galvanized-iron deflectors to match wall will be placed in each opening.

EXHAUST FAN SYSTEM.

(1.) *Vent-ducts for School-rooms.* (*a.*) *Size.* — Allow about one square foot cross section for each sixteen occupants.

(*b.*) Location in a corner room at inside of room, and where possible on same wall as heat-duct.

(*c.*) Location in a room with one outside wall, on inside wall near middle.

(*d.*) The opening will be full size of vent-duct.

(*e.*) The floor will be carried into the bottom of duct and baseboard carried in around. The inside of duct will be finished to match adjoining wall.

(*f.*) No guard will be installed.

TOILET-ROOMS VENT.

(1.) Each doorway into toilet-rooms is to have an opening either through lower panels with register face or underneath the door, equal in net area to the size of vent-duct from room.

(2.) Size of vent-duct from toilets to be equal to 12 square inches each closet and each 16 inches of urinal space.

WARDROBE VENTS.

(1.) Each room to have a vent duct 1⅔ feet area cross section with top and bottom registers.

(2.) The doorway into wardrobe rooms at end farthest from vent duct is to have free opening from school-rooms provided as for toilet-rooms, so that air can pass from school-room through wardrobe and out vent-duct. Door 1½ inches from floor will answer.

ELECTRIC WORK.

(1.) *Service.*—(*a.*) This should enter basement underground at location to be determined by reference to Edison mains and building arrangements.

(*b.*) Main switch, cut-outs and meter should be located as close to service as possible and placed in a cabinet.

(2.) *Conduits.*—(*a.*) All wires to be run in an iron conduit concealed, except conduits for mains in basement, and side outlets in boiler, engine and stack-rooms.

(*b.*) Tap circuit conduits to be run above rough floor wherever possible. If floor construction will not allow this they are to run below floor beams and above ceiling, a space of 2 inches being left in which they can be run.

(3.) *Wire Slot.* — Near each end of a large building, or near the centre of a small one, either an open shaft at least 24 inches by 30 inches, or a slot in wall 4 inches deep and 18 inches wide, should be provided from a point 4 feet below basement ceiling to a point above ceiling of top floor.

(4.) *Cabinets.* — All cabinets to be furnished by wiring contractor, but finished by the general contractor.

(5.) *Cutting.* — All cutting and patching to be done by the general contractor.

(6.) *Outlets.* — (*a.*) Class-rooms to be provided with 6 four-light ceiling outlets, controlled by two switches, and one light for teacher.

(*b.*) Wardrobes to have 1 two-light ceiling outlet, controlled by switch in class-room.

(*c.*) Corridors to be lighted from ceiling wherever possible.

(*d.*) Height of side outlets in rooms to be 6 feet, and in corridors 6 feet 4 inches. Switch outlets to be 4 feet.

(*e.*) Switches in corridors, play-rooms, and pupils' toilet-rooms to be operated by private key.

(7.) *Fixtures.* — Fixtures in class-rooms to be of special design to combine a direct and diffused light.

(8.) *Gas.* — Gas outlets to be provided in all corridors, vestibules, stairways and boiler-room; all except vestibule to be wall outlets. Gas-piping to be included in the Engineer's work.

(9.) *Stereopticon.* — All grammar halls and high schools to be provided with an electric stereopticon and reflectoscope.

(10.) *Clocks and Bells.* —(*a.*) All schools to be provided with a system of clocks, operated by a master clock.

(*b.*) All primary schools to be provided with a system of signal bells, operated by push-buttons.

(*c.*) In all grammar and high schools the bell system to be operated automatically by master clock, according to prearranged programme.

(11.) *Telephones.*—In all schools, each class-room, hall, teachers' room, and boiler-room to be connected to master's office, or to room occupied by the first assistant, by a telephone system.

(12.) *Auxiliary Fire-alarm.* — At one or more points in each floor there are to be located push-buttons connected with an auxiliary fire-alarm box, which is a part of the city fire-alarm system.

NOTE. — Drawings showing special fittings for both plumbing and interior fittings will be found in Appendices XI., XII., and XIII.

VI.

FINANCIAL STATEMENT.

The original appropriation of $5,500,000 (Land and Buildings for Schools), available under the Acts (chapter 473 of the Acts of 1901, and chapter 386 of the Acts of 1902), will be exhausted with the completion of the work now in hand. To this has been added the appropriations authorized by the Act of 1905 (chapter 392) of $1,500,000. The whole of this amount will be required to complete the work now under way, the Charlestown High, the Mechanic Arts High addition, and the Normal and Girls' Latin group.

Other work is already pressing, and unless the Board is given funds to continue the work of building the city will sooner or later revert to the condition of 1900, to remedy which this Board was established. To plan intelligently to meet the growing needs of Boston it is essential that the Board should know, for many years in advance, what amount will be available for building.

The Board believes that the loan for which permission was asked last year should be made, $500,000 in the year 1907, $500,000 in the year 1908, thus completing the $2,500,000 asked for, and that, beginning with the year 1906, a certain amount, not less than 10 cents on $1,000 of assessed valuation should be appropriated from the tax levy, this appropriation to be increased each year by 10 cents until it reaches the full amount available under the law.

A statement of the expenditure of the appropriation for Land and Buildings for Schools will be found in Appendix II. At the end of this Appendix will be found a statement of the income received by the department, which goes to the Sinking Fund, and is applicable to the payment of the interest on the bonds issued.

VII.

CONCLUSION.

With another year's work the Board feels convinced that the standard of accommodation and cost are now accurate and economical, and that in the present state of the market they cannot be reduced without a material loss to the schools. Three small and one large primary building, the last erected, show that we can keep fairly close to our limit.

The slow execution of drawings on the part of our Architects was referred to in the last report, and the Board is inclined to think that it has been over sanguine as to what can be accomplished when its own requirements as to drawings necessary before bids are asked for are considered. Two firms, one with the experience of a previous building, and one without, attempted to make a set of drawings under pressure of the Board as quickly as possible. The former were appointed on July 22, 1904. Drawings and specifications were not ready for bids until October 25, 1905. The latter were appointed August 11, 1904, and drawings and specifications were not ready until March 13, 1905. In the one case fifteen months, in the other seven months. The drawings made by the Architects for the former were for a high school, the first that the Board had planned. It was not able therefore to give the Architects information at the outset, but was constantly changing instructions and modifying the plans presented. The preliminary drawings were not accepted until April, 1905, so that the actual completion of this set of high school drawings occupied about six months. The total number of drawings in the set was thirty-six. To this are added the drawings made by our Engineers, seven in number for the heating, and nine for the electric work, and a specification of 159 printed pages, which was type-written more than once, corrected on galley and page proof by the Architect and by the Chairman, before being finally printed. In the latter case the total number of drawings in the set was twenty-five. To this are added the drawings made by our Engineers, eight in number for the heating and ten for the electric work, and a specification of 118 printed pages. In Appendix XIV. will be found reproductions of the Architects' drawings, exclusive of the framing plans. All this takes time, and if it results in avoiding errors and having no extras it is time well spent. The second of the buildings referred to is complete, finished two months ahead of time, and the record of changes is $320 added and $1,931.62 deducted, and finished, irrespective of the bonus ($3,850), for $157,203.38, or $1,611.62 less than original contract price.

The pressing work which the Board when first established was empowered to do — the erection of the buildings necessary to catch up, as it were, with the school population, the installation of proper and sanitary systems of plumbing and of modern systems of heating and ventilation in the schools that were of sufficient importance to justify this expenditure, and the bettering of conditions as to safety in case of fire — all this has been begun and carried well towards completion. But such work is never finished, and the Board earnestly hopes that with the favorable conditions now existing in the School Committee the work may be carried on more intelligently and more successfully in the future. Many cities are looking to Boston as one of the cities that is aiming to lead in all matters pertaining to education. The Board is anxious to justify that position.

The Board wishes to take this opportunity of thanking those who have helped it in the accomplishment of this work. First, the late Superintendent, Mr. Conley, and the Board of Supervisors. They have given freely their time and knowledge, and have helped the Board in many matters that required the technical knowledge of the educator. In the equipment of kindergarten, manual training, and cooking rooms, and in the larger problems involved in the Normal and Girls' Latin group, the Board would have been helpless without them. They have been equally helpful in such minor questions as fixing the various grades in new buildings, and simplifying the problem of furniture that depended on this.

The Masters, perhaps even more than the Supervisors, have been as usual the chief source from which the Board learns its mistakes and how to rectify them. They are in touch with the daily life of the school, and see it from a point of view that is impossible for the Board. Occasionally the Board has been obliged to decide in opposition to an individual Master, sometimes in opposition to a number, but as a rule the Board finds that the Masters are right, and is glad to follow their advice.

Almost equally valuable lessons might be learned from the Janitors, who, when really interested in their work, as most of them are, can tell better than any one else what will and what won't work or wear under the every-day school conditions. As has been said in previous reports, a closer connection between the Janitors and the Board would be highly desirable.

To the Architects who have worked for it the Board owes a peculiar obligation, for not only have they given most faithful service, not only have they given up their regular office customs to adopt those of the Board, but they have also readily contributed to the Board anything in their offices that the Board wanted. The good points in their plans, their specifications, their office practice, have been appropriated by the Board and, still worse, handed over to the next Architect to use in his work for the Board; all, with the good will and approval of the Architects. This is a spirit that is very highly appreciated by the Board, and if there is anything really good in the buildings erected under this Board, it is due entirely to the unselfish and conscientious work of the Architects.

The Board owes its thanks to the experts, who in various lines have helped in the study of problems. Professor Chandler, who was professional adviser to the late Mayor, gave freely of his time to help the Board in all its building problems. No plan has ever gone through the offices of the Board without having been improved by his advice and keen critical judgment.

In experiments connected with color the special committee of the Public School Art League has given very valuable service. The committee originally included the late Mrs. Whitman, to whose good taste the Board is chiefly indebted for the initiative of the work. Since her death it has been carried on by the other members of the Committee, Messrs. J. T. Coolidge, Jr., and J. Randolph Coolidge, Jr. A series of experiments both in old and new buildings have resulted in giving us a number of color schemes for various aspects which both æsthetically and from the point of view of the oculist are satisfactory.

Dr. Cotton has continued his work on the school chairs, and the Board has now another pattern for the high schools (see Appendix IX.), and, working with Dr. Parmenter, a somewhat similar seat has been devised for use in lecture rooms.

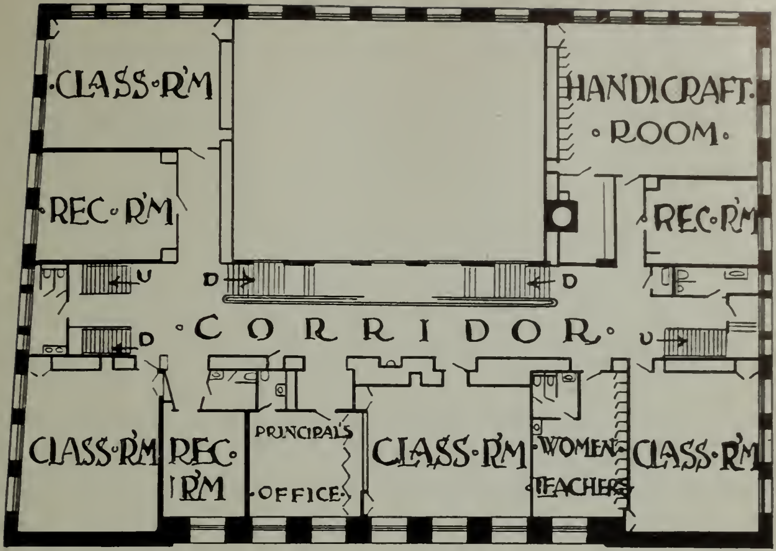
Professor Sanger is advising the Board on matters connected with chemistry, Professor Sabine on physics, and Dr. Jelly on the care of the special classes. To all of these gentlemen the thanks of the Board are due.

In conclusion, the members of the Board wish to express to your Honor their appreciation of the confidence you have shown in them by appointing them to serve under you in your administration, which confidence they will endeavor to deserve.

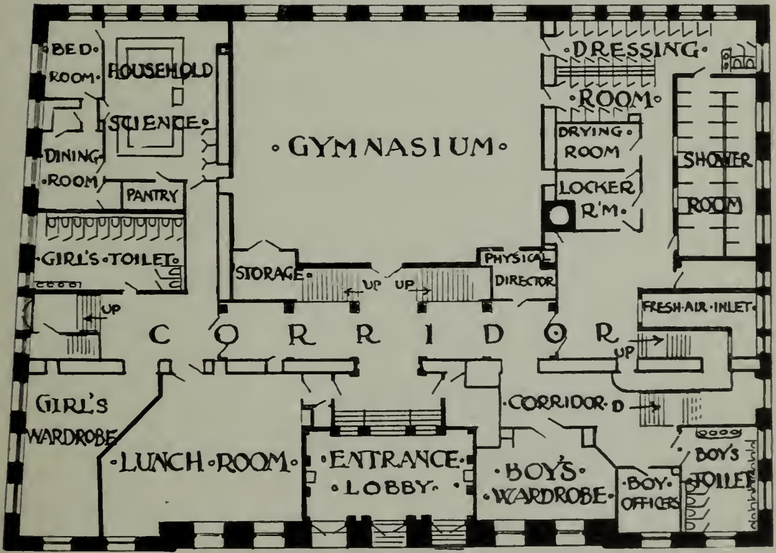
Respectfully submitted,

R. CLIPSTON STURGIS,
JOSEPH J. CORBETT,
CHARLES LOGUE.

APPENDICES.



·FIRST·FLOOR·PLAN·



·GROUND·FLOOR·PLAN·

·SCALE·

CHARLESTOWN HIGH SCHOOL.

present stand at $294,626.30. The cost is partly accounted for by the additional cost of the granite, over and above the cost of the material usually employed for the exterior of school buildings, and which the Board feels justified in expending on account of the position of the building, and partly by the general rise in prices.

The heating system will be a combination pressure (with pump and receiver), or may be run gravity return. When school is in session, the water of condensation may be returned to the boiler by means of the pump. At night, when the fires are banked and the steam system has dropped, the water will be returned directly to the boilers by opening the by-pass valves.

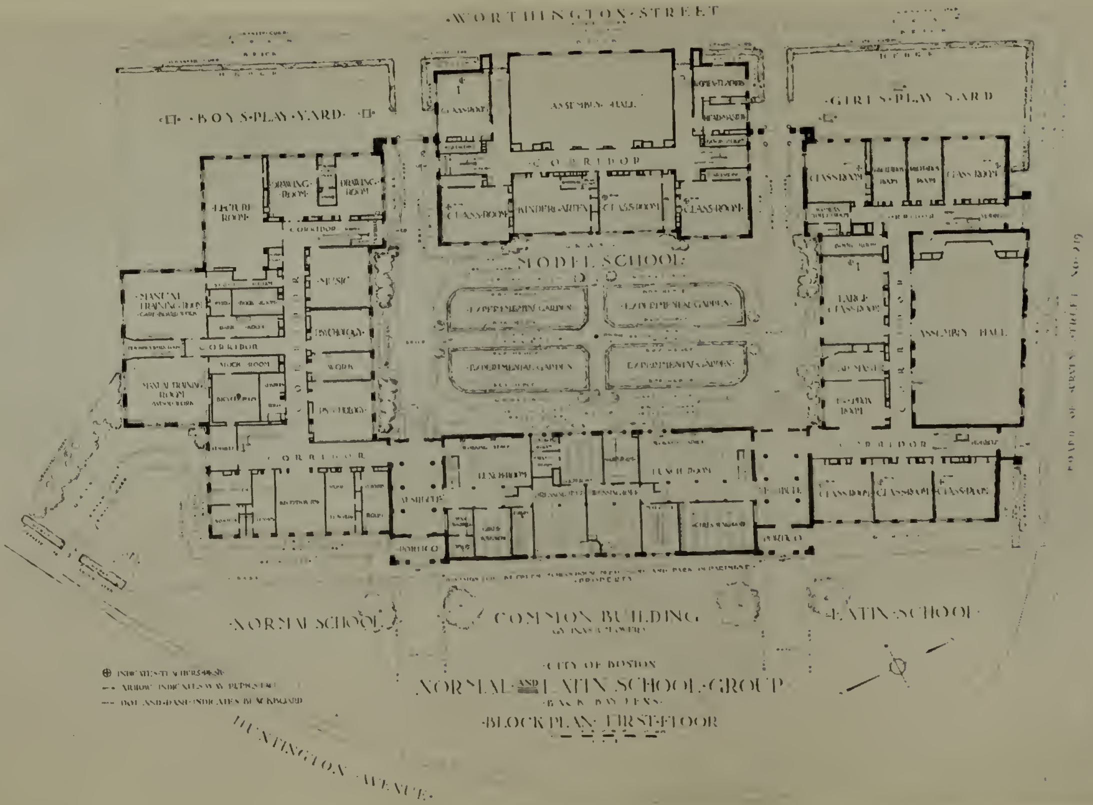
There will be two horizontal return tubular boilers, 90 horse power each, 66 inches in diameter, 16 feet 4 inches long; there is a total of 10,569 square feet of heating surface, comprising indirect radiators, placed in primary heating chamber, and at the base of the fresh-air ducts to the school-rooms, and direct radiators, located in the small rooms and corridors.

Air will be furnished by a 10-foot cone fan, driven by a 12-inch by 8-inch horizontal, low pressure, centre-crank, belted engine, run at 25 pounds steam pressure; this fan to be run normally at 100 revolutions per minute, and at a maximum of 120 revolutions per minute when the entire building is in use, and is to deliver 50,000 cubic feet of air per minute. When this pressure is required for the engine, the building will be heated by reducing this pressure to 5 pounds or less. The ventilation will be stimulated by means of aspirating coils, heated by exhaust steam from the engine and pump. This exhaust may also be used in connection with the general heating system.

The main ducts in the building are of masonry construction in the basement. The main duct is of the nature of a plenum chamber, in which are located some of the supplementary radiators.

Automatic temperature control will be installed in all classrooms, assembly hall, and gymnasium.

The school will be furnished with electric lights, electric clocks, electric bells, operated by a program regulator, connected to master clock, and a telephone system, and stereopticons for assembly hall and lecture-room. There has also been provided for purposes of instruction in electricity, in the laboratories, apparatus for generating direct current of low potential, with proper switches for controlling it, and instruments for measuring the output. A supply of this low-voltage current can be obtained at each pupil's place, in both the physical and chemical laboratories.


·WORTHINGTON·STREET·
·BOYS·PLAY·YARD·
·GIRLS·PLAY·YARD·
ASSEMBLY HALL
CORRIDOR
CLASSROOM
KINDERGARTEN
·MODEL SCHOOL·
EXPERIMENTAL GARDEN
LARGE CLASSROOM
LECTURE ROOM
DRAWING ROOM
MANUAL TRAINING ROOM
MUSIC
PSYCHOLOGY
WORK
LUNCH ROOM
PORTICO
·NORMAL SCHOOL·
·COMMON BUILDING·
·LATIN SCHOOL·
HUNTINGTON AVENUE
⊕ INDICATES TEACHERS DESK
ARROW INDICATES WAY PUPILS FACE
DOT AND DASH INDICATES BLACKBOARD
·CITY OF BOSTON·
NORMAL AND LATIN SCHOOL·GROUP
·BACK BAY FENS·
·BLOCK PLAN· FIRST·FLOOR]

NORMAL AND GIRLS' LATIN GROUP.

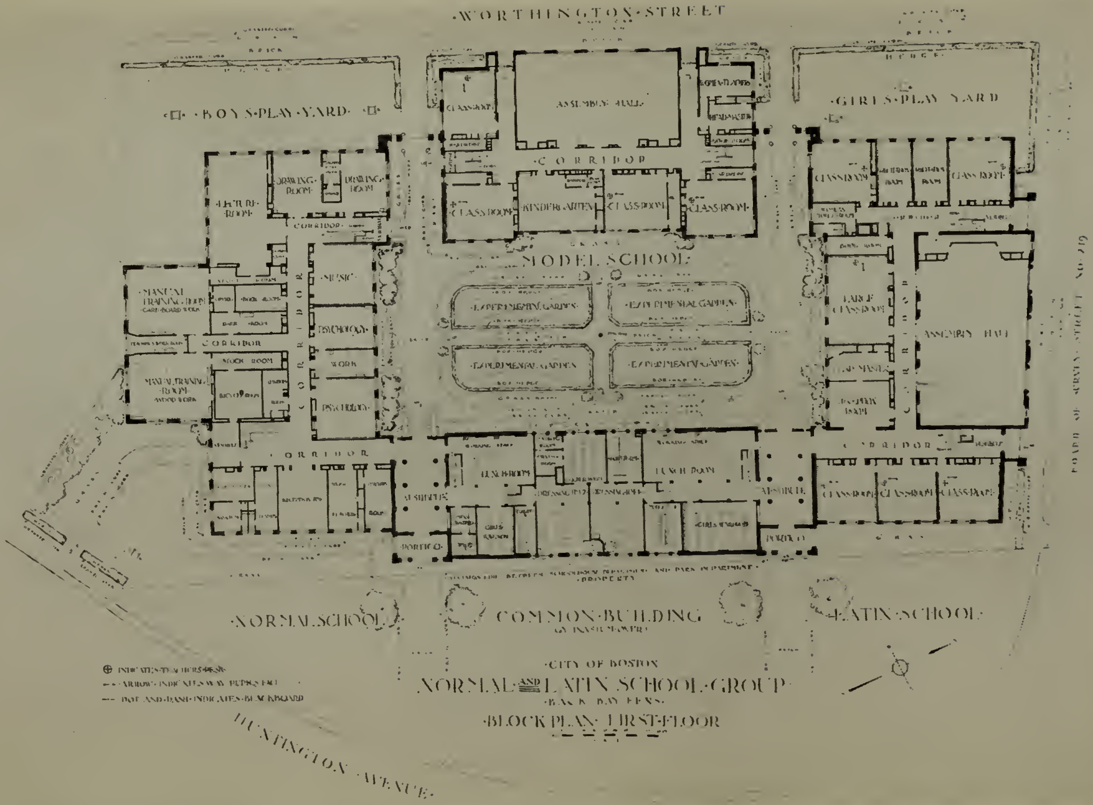
The buildings for the group, known as the Normal and Latin Group, comprise the Normal School, which contains all the class-rooms, recitation-rooms and laboratories for the Normal work for 350 pupils, men and women; the Model School, in which are seventeen class-rooms for all grades from kindergarten up to and including the ninth grade, two rooms for each grade except the eighth and ninth; the Latin School, which contains all the class-rooms, recitation-rooms and laboratories for 600 pupils, and the Common Building, which contains the gymnasium for the Normal and that for the Girls' Latin, dressing-rooms, baths, and lockers connected therewith, and the wardrobes and lunch-rooms.

City of Boston
Schoolhouse Department
Normal and Latin School Group
Back Bay Fens
Peabody and Stearns Maginnis Walsh and Sullivan Coolidge and Carlson
Associated Architects

This group of buildings is situated on the lot on the Tremont entrance to the Fenway, Worthington street and a Board of Survey street, containing 111,000 square feet, as noted in last year's report.

The buildings are grouped around a central courtyard, and face, a little to the south of east, on a planted lot of land belonging to the Park Department of the City of Boston, across which thoroughfare has been given for footways to the schools. The Latin and Normal Schools occupy respectively the north and south ends of the lot. The Common Building comes between on the east, and this will be kept low so as not to shadow the court, and the Model School occupies the space between the buildings on the west. This leaves, flanking the Model School, two playgrounds on Worthington street, for the girls and boys in the Model School; and the central courtyard is arranged partly for ornamental and partly for experimental gardening. The buildings are designed as an harmonious group, executed in brick and limestone with the cornices of terra-cotta.

The heating apparatus for the whole group is a steam boiler plant located under the Latin Building and piped to the apparatus in the various buildings. The boilers are designed to run under

·WORTHINGTON·STREET·
·BOYS·PLAY·YARD·
·GIRLS·PLAY·YARD·
HEDGE
ASSEMBLY·HALL·
CORRIDOR
CLASS·ROOM·
KINDERGARTEN
DRAWING·ROOM·
LECTURE·ROOM·
MODEL·SCHOOL·
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MUSIC·
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WORK
MANUAL·TRAINING·ROOM·CARD·BOARD·WORK
MANUAL·TRAINING·ROOM·WOOD·WORK
STOCK·ROOM
BIOLOGY
LARGE·CLASS·ROOM
LUNCH·ROOM
VESTIBULE
PORTICO
·NORMAL·SCHOOL·
COMMON·BUILDING
·LATIN·SCHOOL·
⊕ INDICATES·TEACHERS·DESK
ARROW·INDICATES·WAY·PUPILS·FACE
DOT·AND·DASH·INDICATES·BLACKBOARD
HUNTINGTON·AVENUE·
BOARD·OF·SURVEY·STREET·NO. 219
·CITY·OF·BOSTON·
NORMAL·AND·LATIN·SCHOOL·GROUP·
·BACK·BAY·FENS·
·BLOCK·PLAN·FIRST·FLOOR·

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City of Boston
Schoolhouse Department
Normal and Latin School Group
Back Bay Fens
Peabody and Stearns Maginnis Walsh and Sullivan Coolidge and Carlson
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The heating apparatus for the whole group is a steam boiler plant located under the Latin Building and piped to the apparatus in the various buildings. The boilers are designed to run under about 40 pounds pressure. The return will be arranged to come back to the boilers either through a receiving tank and pumps, or by opening by-pass valves returning to the boilers by gravity so that the entire plant may be run for the four buildings as a low pressure gravity system.

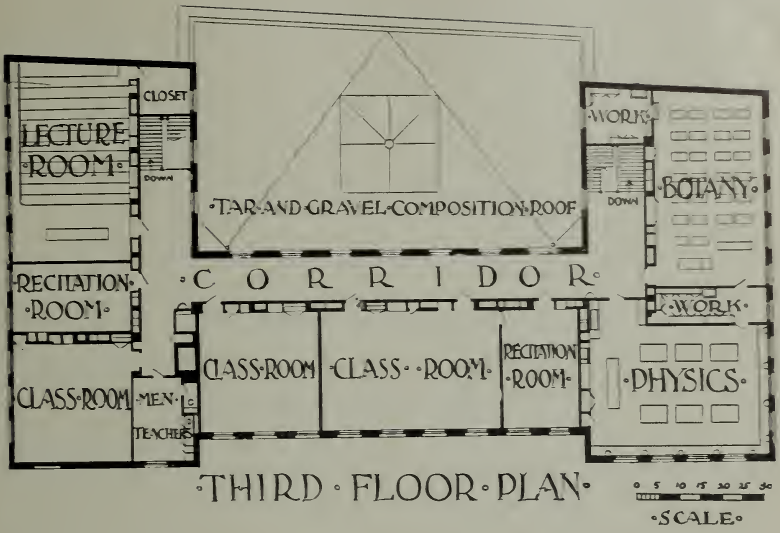
There will be four 72-inch by 2½-foot (133 horse power each) horizontal tubular boilers, having a total horse power of five hundred and thirty-two.

The total radiation in the Latin Building is 10,486 square feet, in the Normal School 10,591 square feet, in the Model Building 8,355 square feet, and in the Common Building 5,270 square feet, a total of 34,702 square feet.

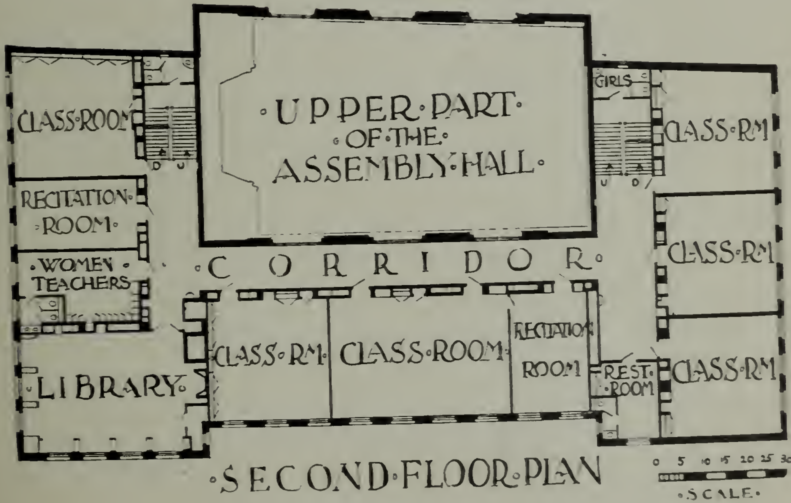
Air will be furnished by fans located in each building, driven by 12-inch by 8-inch horizontal centre-crank, belted engine as follows: For the Girls' Latin, a 10-foot fan run at a maximum speed of 120 revolutions per minute to deliver 50,000 cubic feet of air per minute; for the Normal, a 10-foot fan run at maximum speed of 120 revolutions per minute to deliver 50,000 cubic feet of air per minute; for the Model, one 9 foot, ¾-housing fan, maximum speed 130 revolutions per minute and to deliver 40,000 cubic feet of air per minute; for the Common Building, the air supply is by gravity, but two 5-foot full housing fans driven by alternating current motors are installed to remove foul air from the building. These last are to run at a maximum speed of 200 revolutions per minute and to remove 10,000 cubic feet of air per minute. This latter building being used independently at different hours by the two schools, it was desirable to have the ventilation system of each studied independently. In addition to this ventilation, there is a special 24-inch fan with direct connected motor to ventilate the toilet-rooms.

Automatic temperature control will be installed in the class-rooms, assembly hall and library of the Latin School, and the corresponding rooms in the Normal; in the class-rooms and assembly hall of the Model School.

All the buildings will have electric light and will be equipped with clocks, bells and telephones. Stereopticons have been provided in the Latin building for the assembly hall, physical laboratory and lecture-room; in the Normal for the study hall and lecture hall, with provision for the use of the stereopticon in several other rooms; in the Model for the assembly hall. All of these stereopticons are provided with reflectoscopes so that opaque objects as well as the standard lantern slides may be used. For the purpose of instruction in electricity, apparatus for the generation of direct current of low voltages, and for controlling and measuring the electricity used in experimenting, has been provided in the laboratories of the Latin and Normal buildings, and a motor has been provided for driving the machine tools in the handicraft-room in the Normal School.

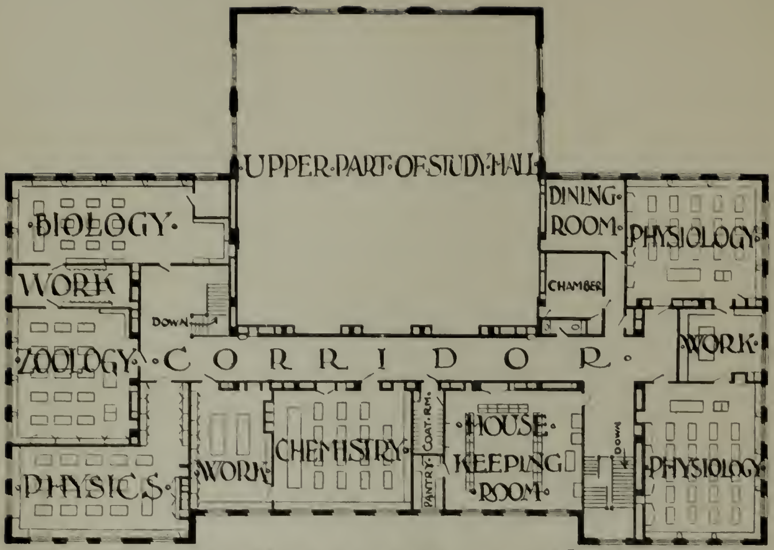


THIRD FLOOR PLAN

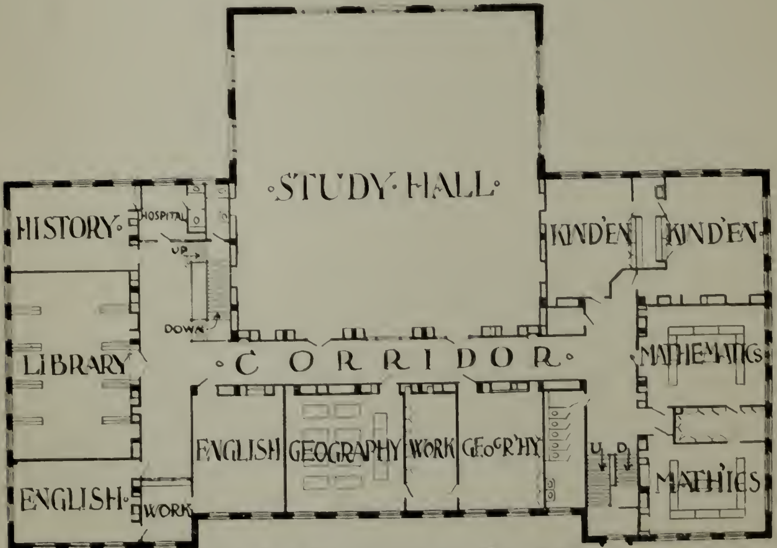


SECOND FLOOR PLAN

LATIN SCHOOL.



THIRD·FLOOR·PLAN



SECOND·FLOOR·PLAN

NORMAL SCHOOL.

GIRLS' LATIN SCHOOL.

The Girls' Latin School contains in the basement the boilers for the whole group and the engines and fan for this building; on the first floor, five small class-rooms, one large class-room, two recitation-rooms, and assembly hall and rooms for the principal and women teachers; on the second floor, five small class-rooms, one large class-room, the library, two recitation-rooms, a second room for women teachers and the upper part of the assembly hall; on the third floor one large class-room and two small rooms, two recitation-rooms, a lecture-room and the laboratories for physics and botany.

NORMAL SCHOOL.

The Normal School contains in the basement the engine, fan, primary coils, and engineer's room; on the first floor, handicraft-rooms, rooms for manual training, both woodwork and cardboard, and a teachers' work-room, a lecture-room, two drawing-rooms, with work-room between, music-room, large and small room for psychology, with work-room between, and a suite of rooms for the teachers, including the principal's room, a reception-room, rooms for the men and women teachers, and a teachers' lunch-room. On the second floor, the library, a room for history, two rooms for English, with a work-room between, a large and small room for geography, with a work-room between, two rooms for mathematics, with a work-room between, and two rooms for instruction in kindergarten work, and also a large study hall capable of seating three hundred and fifty, a hospital-room and toilets; on the third floor, two laboratories for physiology, with a work-room between, rooms for household science, containing kitchen and pantry, and a dining-room and bed-room, a chemical laboratory and work-room, and laboratories for physics, zoölogy and biology, with work-rooms between the two last.

COMMON BUILDING.

The Common Building contains in the basement the heating ducts; on the first floor, which is on a level with the first floor of the adjoining Normal and Girls' Latin Schools, the main vestibules at either end, the wardrobes, toilets and lunch-room, on the Normal side for men and women, on the Girls' Latin side for girls only, and in the central section slightly below this floor, and on the mezzanine immediately above it, dressing-rooms, bath-rooms and lockers, arranged on the system described in the body of the report, for the pupils in the two schools, two independent plants. In the case of the Normal School, the classes consist of thirty pupils, and as their gymnastic training is of a serious nature for which they will regularly dress, provision is made so that the whole class can bathe after their work; the thirty showers are arranged in three ranks with separate control for each rank and separate mixers; three temperatures can therefore be provided, but the class as a whole will be bathed at the same time, taking probably not more than two or three minutes. On the Girls' Latin side the classes are fifty in number, and it is not expected that the classes as a whole will bathe after their ordinary calisthenics; twelve showers are provided for the use of those who are taking additional exercise or who are working in connection with athletic teams, and these are supplied and controlled separately. On the second floor are the gymnasiums for the two buildings, each gymnasium being approximately 55 by 70 feet. Rooms for the Directors of Physical Training are provided on the floor and small galleries for spectators at the end of each gymnasium.

MODEL BUILDING.

The Model Building contains in the basement the fan, engines and primary coils, the play-room, the toilet-rooms and standard rooms for manual training and cooking; on the first floor, the assembly hall, which occupies a story and a half, four class-rooms, large and small room for kindergarten, and the teachers' and head master's rooms; on the second and third floors, six rooms each. It has kindergarten, two first, two second, two third, two fourth, two fifth, two sixth, two seventh, one eighth and one ninth grade. Counting the two kindergarten-rooms as one class-room, this is a seventeen class-room building, ranked as a grammar school, because of its assembly hall, cooking-room and manual training-room.

ESTIMATED COST OF THE GROUP.

The Model School is the only building on which the figures of the Board will give a definite basis on which to estimate beforehand the cost. Being a grammar building of medium size, seventeen rooms, it would, according to the revised grammar schedule given in the body of the report, be allowed 42,000 cubic feet per class-room, and at 22 cents per cubic foot should cost $157,080.

The Latin School, ranking as a high school, with an accommodation of six hundred pupils, would, according to the tentative schedule for high schools, be ranked as a fifteen class-room building, and, allowed the maximum, 80,000 cubic feet per class-room, at 24 cents per cubic foot, would cost $288,000. This building, although a high school, does not contain within its walls a gymnasium and its equipment, nor lunch-room, lockers or toilets, all of which are in the Common Building.

For the Normal, if we take the cube which the actual plan gives us, 1,026,795, at 24 cents, it would cost $246,430.

These two figures together, the Normal and the Latin, should properly cover the cost of the Normal, the Latin and the Common Building, and adding to these the cost of the Model would give $691,510. There is, however, an element of uncertainty on this figure, in connection with the foundations. The Latin School must be piled. The remainder of the group must go down ten or twelve feet to reach solid ground, and the basement floors of two buildings require to be reinforced to give stability. It may be considered that the cost of these foundations would add 2 cents to the total cost per cubic foot of the buildings, piled or having exceptional foundations, namely the Latin and the Model. The cubes of these are, the Latin, 898,000; the Model, 681,000; making $31,580, which added to the $691,510 given above makes about $723,000. With the large amount of work in connection with the grounds and the adjacent streets, the Board believes that the figures ought to be between $720,000 and $740,000. These figures cover, of course, all trades and the buildings completely equipped with all fittings ready for furniture.

APPENDIX II.

APPROPRIATION FOR LAND AND BUILDINGS FOR SCHOOLS.

I.

GENERAL STATEMENT.

The following statement shows the expenditures on account of the above appropriation from February 1, 1905, to February 1, 1906:

February 1, 1905, Balance of Appropriation .	$1,183,430 06
Appropriation for 1905 and 1906. . . .	1,500,000 00
	$2,683,430 06

EXPENDITURES.

Expended for Sanitation:			
Joshua Bates School . .		$7,500 00	
Prescott School . . .		1,641 97	
			$9,141 97
Amounts Expended for Fire Protection:			
Auxiliary Fire-alarm System, putting under ground:			
Dillaway School,	$218 74		
Winchell School,	148 18		
Wells School,	148 17		
Bowditch School,	142 30		
Hillside School .	130 77		
West Roxbury High School .	130 77		
		$918 93	
To changing Outside Doors to swing out and Fireproofing over furnaces:			
Roger Wolcott School . .	$37 35		
Carried forward .	$37 35	$918 93	$9,141 97

Brought forward,	$37 35	$918 93	$9,141 97
484 East Fourth street	28 97		
Lowell School	26 78		
Everett School, Brighton	10 35		
		103 45	
Fire Extinguishers		996 55	
Fire Escapes:			
Old Mather School,	$300 00		
Somerset-street School	90 00		
Comins School	77 00		
Phillips-street School	43 00		
Agassiz School,	1,017 45		
		1,527 45	
			3,546 38
Expended for sites, erecting, grading and planting of lots and furnishing New Buildings:			
Addition, Dorchester High School Site			406 80
Charlestown High School:			
Site (Clearing)		$71 76	
Building		16,491 95	
			16,563 71
Extension, Mechanic Arts High School:			
Building			508 93
Grammar School, City Point (Oliver Hazard Perry School):			
Building		$26,448 67	
Furnishing		5,338 50	
			31,787 17
Grammar School, Dearborn District (Dearborn School):			
Building		$101,153 92	
Furnishing		3,479 30	
			104,633 22
Grammar School, Edward Everett District:			
Site			38 00
Grammar School, Lowell District (Jefferson School):			
(Total cost of site, building and furnishing, $256,677 70.)			
Building		$2,510 11	
Furnishing		410 32	
			2,920 43
Carried forward			$169,546 61

Brought forward		$169,546 61
Grammar School, Mather District (Mather School):		
(Total cost of clearing site, building and furnishing, $321,110 76.)		
Building	$76,019 49	
Furnishing . . .	10,903 72	
		86,923 21
Grammar School, Old Gibson Site (Oliver Wendell Holmes School):		
Building	$95,573 39	
Furnishing . . .	8,467 01	
		104,040 40
Grammar School, Washington Allston District (Thomas Gardner School):		
Building	$57,485 05	
Furnishing . . .	5,031 18	
		62,516 23
New Ticknor School (John Boyle O'Reilly School):		
(Total cost of addition to site and clearing, building and furnishing, $136,812 47.)		
Building	$18,593 16	
Furnishing . . .	462 76	
		19,055 92
Normal and Latin School Group:		
Site	$608 73	
Building	6,780 48	
		7,389 21
Primary School, Eliot and Hancock Districts (Christopher Columbus School):		
(Total cost of clearing and addition to site, building and furnishing, $242,227.17.)		
Furnishing		4,348 55
Primary School, George Putnam District (Ellis Mendell School):		
(Total cost of site, building and furnishing, $148,694.56.)		
Building		262 88
Primary School, Glenway Lot (William E. Endicott School):		
Building		68,102 29
Primary School, Henry L. Pierce District (John Greenleaf Whittier School):		
Building	$50,414 72	
Furnishing	2,407 58	
		52,822 30
Carried forward		$575,007 60

Brought forward		$575,007 60
Primary School, Howard-avenue Lot (Nathaniel Hawthorne School):		
Site	$764 00	
Building	33,381 09	
		34,145 09
Primary School, Hugh O'Brien District (Samuel W. Mason School):		
Building	$51,209 75	
Furnishing	3,264 95	
		54,474 70
Primary School, Lewis District (Sarah J. Baker School):		
Site	$19 42	
Building	146,541 64	
Furnishing	2,816 90	
		149,377 96
Primary School, Lyman District (James Otis School):		
(Total cost of site, building and furnishing, $150,916.86.)		
Site	$12,131 71	
Building	91,689 42	
Furnishing	3,033 03	
		106,854 16
Primary School, Tuckerman Lot:		
Building	$80,139 84	
Furnishing	2,299 50	
		82,439 34
Schoolhouse, Phillips District (Washington School):		
(Total cost of clearing site, building and furniture, $555,530.53.)		
Site	$100 00	
Building	7,951 90	
Furnishing	1,661 11	
		9,713 01
Miscellaneous:		
Engineering expenses		8,064 67
Incidental expenses, including salaries, blue prints, engineer supplies, stationery, car-fares and travelling expenses		9,552 64
Total expenditures of 1905–06		$1,029,629 17
Amount voted and set aside, but not expended to date, by Schoolhouse Commissioners for Fire Protection, Engineering and Office Expenses, Sites, Construction and Furnishing of New Buildings		1,200,725 22
Balance of Appropriation, undistributed		453,075 67
		$2,683,430 06

II.

SUBDIVISION OF EXPENDITURES.

Land and Buildings for Schools, from February 1, 1905, to February 1, 1906.

Primary Schools	$589,818 49
Grammar Schools	396,168 43
High Schools	24,490 49
Not chargeable to any one school	18,613 86
Manual Training Schools	537 90
Total	$1,029,629 17

III.

Statement of Income, Land and Buildings for Schools.

Rental received from property	$3,354 93
Forfeiture (contractor withdrew bid)	2,000 00
Sale of old material	1,632 76
Total	$6,987 69

APPENDIX III.

APPROPRIATIONS FOR RENTALS, FURNITURE, REPAIRS, ALTERATIONS AND EXPENSES OF THE COMMISSION.

I.

GENERAL STATEMENT.

During the year February 1, 1905, to February 1, 1906, the following sums were expended by the Schoolhouse Department for furniture, repairs, alterations, rents and expenses of the Commission:

February 1, 1905, Appropriation	$336,700 00
Furniture, Repairs, etc.:	
Carpentry, lumber and hardware	$62,853 95
Heating apparatus	55,115 22
Furniture	30,929 48
Painting and glazing	16,279 95
Plumbing	15,017 00
Masonry, paving and drains	13,639 89
Salaries of Inspectors	12,000 00
Blackboards, new slate and setting up	11,424 93
Roofing and gutters	10,979 62
Whitening and plastering	8,778 36
Electric bells and telephone systems	4,173 44
Electric wiring and fixtures	3,994 10
Salaries, Engineering Department	3,580 79
Rental and care Auxiliary Fire-alarm boxes	3,332 16
Automobile expenses	3,188 32
Iron fences and wire screen work	3,104 98
Boiler insurance	3,095 39
Gas-fitting and fixtures	2,841 17
Ventilation (galvanized ironwork)	2,506 09
Printing, stationery and postage	2,251 76
Teaming	1,691 15
Care of lawns and planting	1,645 28
Carried forward	$272,423 03

Brought forward		$272,423 03
Cleaning buildings, including supplies		1,568 77
Locksmithing		1,493 87
Travelling expenses		1,225 00
Blackboards, repairs		1,156 81
Electric clock systems		1,043 68
Horse-keeping		1,012 92
Electric motors and engines		745 65
Fire hose		561 15
Flagstaffs, new, and care of old		538 04
Gymnasium apparatus		440 74
Rubber stair treads		328 23
Janitors' supplies		250 60
Plans, blue printing and advertising		178 72
Prism glass, furnishing and setting		128 85
Asphalting		119 00
Fuel		47 20
		$283,262 26
Rentals, etc.:		
High School	$10,544 40	
Kindergarten Schools	5,878 34	
Primary Schools	4,565 00	
Grammar Schools	4,101 31	
Evening Drawing Schools	2,488 00	
Cooking Schools	906 00	
Manual Training Schools	900 00	
		29,383 05
Administration Expenses :		
Salaries	$17,646 33	
Rental of offices	4,200 00	
Care of office and electric lights,	1,132 89	
Stationery and supplies	669 57	
Messenger service and telephone,	405 90	
		24,054 69
		$336,700 00

II.

SUBDIVISION OF EXPENDITURES.

Rents and salaries, furniture, repairs and alterations in school buildings, from February 1, 1905, to February 1, 1906.

Grammar Schools	$127,277 24
Primary Schools	84,613 72
Miscellaneous	55,732 30
Carried forward	$267,623 26

Brought forward	$267,623 26
High Schools	44,560 86
Kindergartens	9,129 13
Manual Training Schools	4,972 73
Cooking Schools	2,955 51
Evening Elementary Schools	2,964 50
Evening Drawing Schools	2,821 07
Deaf Mutes' School	1,672 94
	$336,700 00

III.

SUBDIVISION AS TO SCHOOLS.

South End and Back Bay.

Appleton street	$647 97	
Charles C. Perkins	710 93	
Cook	204 63	
Dwight	1,060 12	
English High	4,637 20	
Everett	780 73	
Franklin	1,050 91	
Girls' High	3,151 11	
Horace Mann	1,672 94	
Joshua Bates	666 52	
Mechanic Arts High	1,533 56	
Normal (Rice Building)	1,434 07	
Prince	877 71	
Public Latin	1,483 09	
Rice	644 70	
Rutland street	147 08	
West Concord street	874 72	
		$21,577 99

City Proper.

Andrews	$1,470 92	
Brimmer	772 95	
Carver street	38 00	
Pierpont	187 20	
Quincy	1,545 71	
Skinner	330 14	
Tyler street	347 28	
Wait	552 59	
Way street	451 51	
Winthrop	1,014 39	
		6,710 69
Carried forward		$28,288 68

Brought forward		$28,288 68

NORTH AND WEST ENDS.

Baldwin	$389 04	
Bowdoin	1,972 23	
Christopher Columbus	1,140 70	
Cushman	2,050 24	
Eliot	1,364 78	
Emerson	223 55	
Freeman	412 58	
Grant	423 61	
Hancock	2,040 08	
Hancock Annex	135 87	
Mayhew	1,722 73	
North Margin street	12 80	
Phillips	1,977 38	
Paul Revere	1,110 23	
Pormort	552 19	
Sharp	769 94	
Somerset street	868 93	
Wells	2,016 29	
Winchell	660 63	
Washington	3,434 45	
		23,278 25

ROXBURY, EAST OF COLUMBUS AVENUE.

Aaron Davis	$250 88	
Abby W. May	793 96	
Albert Palmer	339 11	
Asa Gray	866 54	
Bartlett street	506 38	
Dearborn (old)	325 14	
Dillaway	1,103 30	
Dudley	1,397 38	
Ellis Mendell	557 10	
George Putnam	974 49	
George Putnam Annex	96 37	
George street	1,525 49	
Howard avenue	839 39	
Howard-avenue Annex	50 61	
Hugh O'Brien	3,527 63	
Hugh O'Brien Annex	1,096 16	
Hull	513 11	
Hyde	1,352 34	
Lewis	*34,650 45	
Lewis Annex	24 00	
Carried forward	$50,789 83	$51,566 93

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* $15,666.67 repairing damage by fire.

Brought forward	$50,789 83	$51,566 93
Mt. Pleasant avenue	123 47	
Miles Standish	882 74	
Old Roxbury High	385 75	
Phillips Brooks	909 18	
Roxbury High	3,222 77	
Roxbury High Annex	520 31	
Ruggles street	66 50	
Samuel W. Mason	45 00	
Sherwin	1,201 26	
Thornton street	101 10	
W. L. P. Boardman	764 88	
William Bacon	308 23	
Williams	331 49	
Winthrop street	61 83	
		59,714 34

ROXBURY, WEST OF COLUMBUS AVENUE.

Comins	$892 08	
Cottage place	220 04	
Farragut	997 48	
Heath street	651 71	
Ira Allen	583 47	
Jefferson	329 00	
Lowell	2,464 94	
Lowell Annex	147 47	
Lucretia Crocker	465 23	
Martin	1,493 58	
Old Ira Allen	81 20	
Phillips street	490 82	
Smith street	120 68	
Wyman street	818 26	
		9,755 96

JAMAICA PLAIN AND WEST ROXBURY.

Agassiz	$445 98	
Bowditch	765 67	
Canterbury street	515 09	
Charles Sumner	880 24	
Chestnut avenue	50 46	
Francis Parkman	302 75	
Florence street	173 41	
Henry Vane	314 70	
Hillside	325 42	
Longfellow	688 42	
Margaret Fuller	1,020 95	
Mt. Vernon	1,112 55	
Carried forward	$6,595 64	$121,037 23

Brought forward	$6,595 64	$121,037 23
Old Agassiz	227 30	
Old Baker street	308 92	
Phineas Bates	121 40	
Robert G. Shaw	1,566 99	
Stephen M. Weld	1,379 79	
Washington street (Forest Hills)	42 94	
Washington street (Germantown)	156 94	
West Roxbury High	980 73	
		11,380 65

SOUTH BOSTON.

Benjamin Pope	$1,056 29	
Benjamin Dean	297 56	
Bigelow	1,184 46	
Capen	460 36	
Choate Burnham	527 09	
Clinch	994 86	
Cyrus Alger	246 82	
Drake	1,889 23	
Gaston	1,271 11	
Hawes Hall	478 46	
John A. Andrew	883 77	
John Boyle O'Reilly	183 97	
Lawrence	2,324 40	
Lincoln	1,884 87	
Norcross	412 15	
Old Parkman Storehouse	787 56	
Oliver Hazard Perry	443 94	
Parkman	813 26	
Samuel G. Howe	698 79	
Shurtleff	3,578 83	
South Boston High	2,324 37	
Simonds	145 75	
Thomas N. Hart	1,864 31	
Tuckerman (Old)	85 20	
Tuckerman (New)	11 18	
		24,848 59

DORCHESTER.

Adams street	$254 12	
Atherton	375 25	
Benjamin Cushing	701 75	
Bailey street	224 37	
Bon Homme Richard	85 65	
Brewster	345 74	
Brewster Annex	31 04	
Carried forward	$2,017 92	$157,266 47

Brought forward	$2,017 92	$157,266 47
Christopher Gibson	582 80	
Dorchester avenue	5,143 27	
Dorchester High	3,329 26	
Edward Everett	1,457 63	
Gilbert Stuart	402 23	
Glenway	128 95	
Glenway Annex	13 30	
Harbor View street	147 65	
Harris	2,953 49	
Henry L. Pierce	1,654 15	
John Greenleaf Whittier	57 94	
Little Em'ly	33 98	
Lyceum Hall	250 58	
Mather (New)	653 88	
Mayflower	94 50	
Mary Hemenway	776 30	
Minot	223 57	
Marshall	1,279 71	
Old Dorchester High	420 36	
Old Everett	260 62	
Old Gibson	205 70	
Old Mather (Brick)	1,882 11	
Old Mather (Wood)	112 50	
Oliver Wendell Holmes	131 35	
Quincy street	313 85	
Roger Wolcott	1,315 40	
Roger Clap	1,216 86	
Savin Hill	133 67	
Stoughton	133 15	
Thetford avenue	1,480 83	
Tileston	248 06	
Walnut street	208 12	
Ward Room Building	74 60	
William E. Russell	2,063 91	
		31,402 20

CHARLESTOWN.

Adams and Chestnut street	$401 12	
Bunker Hill Grammar	784 52	
Bunker Hill Primary	265 48	
Benjamin F. Tweed	447 51	
Charlestown High (Old)	1,414 30	
Common street	331 71	
Copley (Charlestown High)	1,205 31	
Chauncey place	37 26	
Frothingham	685 46	
Frothingham Annex	50 10	
Carried forward	$5,622 77	$188,668 67

Brought forward	$5,622 77	$188,668 67
Harvard	1,136 15	
Harvard Hill	1,119 45	
Mead street	329 55	
Medford street	538 07	
Polk street	363 49	
Prescott	347 15	
Prescott Annex	255 45	
Warren	1,504 94	
William H. Kent	550 84	
		11,767 86

EAST BOSTON.

Adams	$1,087 30	
Austin	250 29	
Blackinton	7,230 06	
Chapman	670 11	
Cudworth	1,100 84	
East Boston High	2,387 52	
Emerson	904 90	
James Otis	43 96	
Lyman	7,577 74	
Noble	702 53	
Noble Annex	332 30	
Old East Boston High	1,307 81	
Paul Jones	1,429 09	
Plummer	1,132 28	
Tappan	565 85	
Webb	292 14	
		27,114 72

BRIGHTON.

Aberdeen	$112 84	
Auburn	107 48	
Bennett	709 27	
Bennett Annex	175 59	
Brighton High	2,146 08	
Everett	100 21	
Frederic A. Whitney	342 51	
Harvard	217 72	
Hobart street	241 47	
Old Brighton High	24 00	
Oak square	157 05	
Thomas Gardner	12 66	
Union street	10 00	
Washington Allston	1,054 17	
Washington Allston Annex	323 27	
Carried forward	$5,734 32	$227,551 25

Brought forward	$5,734 32	$227,551 25
William Wirt Warren	655 18	
Winship	1,364 74	
		7,754 24
Portable buildings (92)		14,519 72
Incidentals not chargeable to any one school		31,680 35
Administration expenses		24,054 69

HIRED BUILDINGS, RENTS AND REPAIRS.

Brooks street, Faneuil	$600 00	
Beech-street lot	125 00	
Bennington-street lot	45 00	
Broadway, 732	166 00	
Chambers street, 103	5 82	
Chambers street, 105	5 82	
Church of the Redeemer	420 00	
Columbus avenue, 147	1,326 77	
Columbus avenue, 1448	1,910 70	
Centre street, Dorchester lot	50 00	
Chambers street, 38	599 50	
Chauncy Hall	10,716 33	
Dayton avenue, 1	314 75	
Dudley street, 500	363 62	
Eliot street, Jamaica Plain	300 00	
Fourth street, 484	900 15	
Greenwood Hall	694 62	
Huntington avenue, 766	102 34	
Hewlett street, 17	240 00	
Lauriat avenue, 170	1,235 34	
Moon street	7 47	
North Harvard street, 255	139 50	
North Russell street, 31	65 00	
Pearl street, 8, Charlestown	465 11	
Parmenter street, 20	1,900 00	
Parmenter street, 32	472 31	
Saratoga street, 399	318 15	
South Baptist Church	602 10	
Tremont street, 238	3,631 77	
Tremont street, 1508	600 00	
Tremont street, 1518	649 94	
Unitarian Church, Roslindale	604 75	
Walk Hill street, 727	367 59	
Washington street, 2307	1,194 30	
		31,139 75
		$336,700 00

APPENDIX IV.

APPROPRIATION FOR SCHOOLHOUSES.

I.

GENERAL STATEMENT.

The following statement shows the expenditures on account of the above appropriations for completing and furnishing schoolhouses turned over to the Schoolhouse Department by the School Committee, February 11, 1902:

February 1, 1905, balance of appropriation unexpended	$1,166 77
December 12, 1905, additional appropriation .	3,033 23
	$4,200 00

Bigelow School, Additional site	$4,200 00

II.

SUBDIVISION OF EXPENDITURES.

Grammar Schools	$4,200 00

APPENDIX V.

HIRED BUILDINGS.

I.

Rooms in the following buildings have been hired for school purposes, rents, taxes, water rates, heating, lighting and janitors' expenses paid for the same, amounting to $29,383.05, during the year from February 1, 1905, to February 1, 1906:

For	Location.	Remarks.
Bennett District, Kindergarten,	Faneuil Church, Brooks st.	Rent per annum, $600, including heat and janitor.
Blackinton District..............	Bennington street, for Portable Building, No. 51....	Rent per annum, $180, for use of land only.
Comins District, Cooking School,	Tremont street, 1518........	Rent per annum, $600, including heat and janitor.
Comins District, Kindergarten and Primary classes..........	Germania Hall, 1448 Columbus avenue...............	Rent per annum, $1,800, including heat and janitor.
Dearborn District, Primary class..........................	Dayton avenue, 1..........	Rent per annum, $600, including heat and janitor; vacated July 1, 1905.
Dorchester High School....	Centre street, Dorchester, for Portable Buildings, Nos. 10, 31 and 32.........	Rent per annum, $200, for use of land only.
Emerson District, Primary class,	Saratoga street, 399........	Rent per annum, $300, not including heat or janitor.
Evening Drawing School........	Columbus avenue, 147......	Rent per annum, $1,300, not including heat or janitor.
Evening Drawing School........	Masonic Hall, 2307 Washington street, Roxbury...	Rent per annum, $1,000. City pays water rates, heat and janitor.
Gaston District, Primary class..	Pilgrim Hall, 732 Broadway, South Boston.......	Rent per annum, $1,680, including heat and janitor; vacated February 1, 1905.
Gaston District, Kindergarten..	Church of the Redeemer, South Boston.............	Rent per annum, $840, including heat and janitor; vacated July 1, 1905.

HIRED BUILDINGS.— *Continued.*

For	Location.	Remarks.
Girls' Latin School	Chauncy Hall, Copley square	Rent per annum, $7.000 and taxes; city pays for heat, water rates and janitor.
Hugh O'Brien District, Kindergarten	500 Dudley street	Rent per annum, $420, not including heat or janitor; vacated Sept. 1, 1905.
Hancock District, Kindergarten and Primary Classes	Parmenter street, 20	Rent per annum, $1,900, including heat and janitor.
Hancock District, Grammar Class	Parmenter street, 32	Rent per annum, $400, including heat and janitor.
Lincoln District, Primary Classes	South Baptist Church, E. Fourth street, So. Boston,	Rent per annum, $1,200, including heat and janitor; vacated July 1, 1905.
Longfellow District, Primary Classes	Beech street, Phineas Bates Port. Building No. 12	Rent per annum, $125, for use of land only.
Longfellow District, Primary Class	Hewlett street, 17	Rent per annnm, $240, not including heat or janitor.
Longfellow District, Kindergarten	Unitarian Church, Roslindale	Rent per annum, $600, including heat and janitor.
Manual Training School	Tremont street, 1508	Rent per annum, $600, including heat and janitor.
Manual Training School	Eliot street, Jamaica Plain,	Rent per annum, $300, including heat and janitor.
Oliver Wendell Holmes District Kindergarten	Greenwood Hall, Dorchester	Rent per annum, $600, including heat and janitor.
Roger Wolcott District, Kindergarten	Walk Hill street, 727	Rent per annum, $360, including heat and janitor.
Roger Wolcott District, Kindergarten and Primary Class	Lauriat avenue, 170, Dorchester	Rent per annum, $1,200, including, heat, water and janitor.
Shurtleff District, Kindergarten and Cooking School	East Fourth street, 484, South Boston	Rent per annum, $600, not including heat, water or janitor.
Warren District, Kindergarten and Primary	Pearl street, 8	Rent per annnm, $720; city pays heat, water and janitor's services.
Washington Allston District, Grammar Class	North Harvard street, 255	Rent per annum, $150; city pays water rates and janitor; vacated Aug. 15, 1905.

HIRED BUILDINGS.— *Concluded.*

For	Location.	Remarks.
Wells District, Kindergarten and Grammar Classes.........	Chambers street, 38........	Rent per annum, $1,080, including heat, janitor and water rates; grammar classs vacated March 1, 1905; rent reduced $600.
Winthrop District, Grammar Classes........................	Tremont street, 238.........	Rent per annum, $3,333.34, including heat, water, and janitor's service.

II.

SUBDIVISION.

The following shows the rents, taxes, water rates, heating, lighting and janitor's service, paid for each building hired during the year; repairs not included:

Beech street lot, Roslindale	$125 00
Bennington street lot	45 00
*Broadway, No. 732, South Boston . . .	140 00
Brooks street, Brighton, Faneuil Chapel . .	600 00
Centre street lot, Dorchester	50 00
Chambers street, St. Andrew's Chapel . .	580 00
Chauncy Hall, Copley square	10,494 40
*Church of the Redeemer, East Fourth street, South Boston	420 00
Columbus avenue, No. 147	1,300 00
*Dayton avenue, No. 1, Roxbury House Association,	300 00
*Dudley street, No. 500	280 00
East Fourth street, No. 484, South Boston . .	612 00
Eliot street, Jamaica Plain, Trustee Building .	300 00
Germania Hall, No. 1448 Columbus avenue, Roxbury	1,800 00
Greenwood Hall, Glenway, Dorchester . .	600 00
Hewlett street, No. 17, Roslindale . . .	240 00
†Huntington avenue, No. 766	102 34
Lauriat avenue, No. 170, Dorchester . . .	1,200 00
‡Moon street, Parochial School	7 47
*North Harvard street, No. 255	125 50
Parmenter street, No. 20, North End Union .	1,900 00
Parmenter street, No. 32	400 00
Carried forward	$21,621 71

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* Have been vacated during the year. † Paid on execution of court.
‡ Water rates for the year 1904.

Brought forward	$21,621 71
Pearl street, No. 8, Charlestown . . .	180 00
Saratoga street, No. 399, East Boston . .	300 00
*South Baptist Church, East Fourth street, South Boston	600 00
Tremont street, No. 238	3,333 34
Tremont street, No. 1508, Roxbury . . .	600 00
Tremont street, No. 1518, Roxbury . . .	600 00
Unitarian Church, South street, Roslindale . .	600 00
Walk Hill street, No. 727, Dorchester . .	360 00
Washington street, No. 2307, Roxbury . .	1,188 00
	$29,383 05

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* Has been vacated during the year.

APPENDIX VI.

Table Showing Cost of Buildings, Cost per Cubic Foot, Children Accommodated, and Cost per Pupil.

NAME OF SCHOOL BUILDING.	Building, Heating, Plumbing, and Electrical Contracts.	Total Cost of Building.	PERCENTAGE CONTRACTS BEAR TO TOTAL COST OF BUILDING.				Cubical Contents.	Cost per Cubic Foot.	PROPORTION CONTRACTS BEAR TO COST PER CUBIC FOOT.				Cubic Feet, Class-room.	Children Accommodated.	Cost per Pupil.
			Bldg.	Heat.	Plumb.	Elec.			Bldg.	Heat.	Plumb.	Elec.			
			Per Ct.	Per Ct.	Per Ct.	Per Ct.		Cents	Cents	Cents	Cents	Cents			
Marshall........................	B., $106,516 75 H., 9,483 00 P., 5,197 00 E., 3,270 90	$124,467 65	85	8	4	3	516,624	24	20	2	1	1	37,000	700	$177 81
William E. Russell............	B., $158,189 52 H., 15,132 40 P., 9,580 29 E., 5,622 35	188,524 56	84	8	5	3	894,941	21	17	2	1	1	50,000	900	209 47
Farragut........................	B., $127,262 98 H., 12,432 00 P., 6,821 45 E., 4,010 00	150,526 43	85	8	4	3	652,630	23	19	2	1	1	47,000	700	215 04
Paul Jones....................	B., $95,095 75 H., 10,376 00 P., 5,324 00 E., 3,574 60	114,370 35	83	9	5	3	510,386	22	18	2	1	1	36,000	700	163 39
Ellis Mendell..................	B., $103,569 20 H., 9,625 04 P., 5,658 11 E., 3,414 85	122,267 20	85	8	4	3	517,035	24	20	2	1	1	43,000	600	203 78
Jefferson......................	B., $182,261 94 H., 16,927 15 P., 6,449 90 E., 5,251 50	210,890 49	86	8	3	3	856,777	24	20	2	1	1	45,000	950	221 99

Table Showing Cost of Buildings, Cost per Cubic Foot, Children Accommodated, and Cost per Pupil.—*Concluded.*

NAME OF SCHOOL BUILDING.	Building, Heating, Plumbing, and Electrical Contracts.	Total Cost of Building.	PERCENTAGE CONTRACTS BEAR TO TOTAL COST OF BUILDING.				Cubical Contents.	Cost per Cubic Foot.	PROPORTION CONTRACTS BEAR TO COST PER CUBIC FOOT.				Cubic Feet, Class-room.	Children Accommodated.	Cost per Pupil.
			Bldg.	Heat.	Plumb.	Elec.			Bldg.	Heat.	Plumb.	Elec.			
			Per Ct.	Per Ct.	Per Ct.	Per Ct.		Cents	Cents	Cents	Cents	Cents			
Washington	B., $263,661 16 H., 28,305 94 P., 21,417 05 E., 12,157 45	$325,541 60	82	7	7	4	1,300,792	25	20	2	2	1	43,000	1,500	$217 03
Christopher Columbus........	B., $136,966 08 H., 16,244 00 P., 15,519 00 E., 4,783 00	173,512 08	79	9	9	3	727,068	23	18	2	2	1	30,000	1,200	144 59
John Boyle O'Reilly..........	B., $95,712 50 H., 10,227 00 P., 4,040 00 E., 2,859 50	112,839 00	85	9	4	2	450,248	25	21	2	1	1	32,000	700	161 20
Oliver Hazard Perry.........	B., $118,497 38 H., 17,621 50 P., 5,094 00 E., 4,932 75	146,145 63	81	12	4	3	612,351	24	19	3	1	1	44,000	700	208 78
Mather.......................	B., $241,098 44 H., 27,807 00 P., 11,645 50 E., 8,782 05	289,332 99	83	10	4	3	1,353,831	21	17	2	1	1	42,000	1,600	180 83
Addition, Francis Parkman..															
Thomas Gardner[1]............	B., $113,769 15 H., 15,994 04 P., 6,038 00 E., 4,466 38	140,267 57	81	12	4	3	735,573	19	15	2	1	1	52,000	700	200 38
Oliver Wendell Holmes.......	B., $159,563 85 H., 21,930 18 P., 8,037 00 E., 6,116 99	195,648 02	81	12	4	3	991,609	20	16	2	1	1	41,000	1,200	163 04

Samuel W. Mason............	B., $99,527 64 H., 10,447 00 P., 4,[illegible]90 00 E., 3,360 00	118,324 64	84	9	4	3	438,223	27	23	2	1	1	31,000	700	169 03
Dearborn[1]	B., $178,483 11 H., 20,874 00 P., 8,612 00 E., 5,897 00	213,866 11	83	10	4	3	980,100	22	18	2	1	1	47,000	1,050	203 58
John Greenleaf Whittier[1].....	B., $61,053 50 H., 7,540 70 P., 3,551 00 E., 2,590 90	74,736 15	82	10	5	3	325,051	23	19	2	1	1	32,000	500	149 47
James Otis..................	B., $90,867 00 H., 8,767 00 P., 4,889 00 E., 3,295 00	107,818 00	84	8	4	4	411,645	26	22	2	1	1	34,000	600	179 70
Tuckerman[1]	B., $61,875 79 H., 8,422 00 P., 4,226 70 E., 2,898 76	77,423 25	80	11	5	4	330,171	23	18	3	1	1	33,000	500	154 85
William E. Endicott[1].........	B., $64,482 00 H., 7,973 00 P., 3,633 60 E., 2,863 00	78,951 60	82	11	4	3	348,883	23	18	3	1	1	35,000	500	157 90
Sarah J. Baker[1]..............	B., $129,880 38 H., 18,673 00 P., 7,625 00 E., 4,880 00	161,058 38	81	11	5	3	702,384	23	18	3	1	1	29,000	1,200	134 21
Nathaniel Hawthorne[1]	B., $54,622 00 H., 7,527 00 P., 3,100 00 E., 2,703 00	67,952 00	80	11	5	4	281,305	24	19	3	1	1	31,000	450	151 00
Charlestown High[1]..........	B., $250,912 30 H., 20,000 00 P., 13,970 00 E., 9,744 00	294,626 30	85	7	5	3	1,170,000	25	21	2	1	1	87,000	540	545 60

[1] Cost to February 1, 1906.

NOTE. — Number of new buildings, 23. Total amount of contracts primary and grammar, $3,194,463.70; high, $294,626.30; addition Francis Parkman, $36,976.99; grand total, $3,526,066.99. Total number of children accommodated: Primary, 9,050; grammar, 8,600; total, 17,650. Average cost per cubic foot, 23 cents. Average cost per cubic foot, primary, 24 cents. Average cost per cubic foot, grammar, 22 cents. Average cost per pupil, $180.98. Average cost per pupil, primary, $164.05. Average cost per pupil, grammar, $198.86. Except for first three foot notes, Charlestown High School not considered in these averages.

APPENDIX VII. — Table Showing Original Contract Prices, Finished Contract Schoolhouse

NAME OF BUILDING.	Kind.	Location.	Architect.	Original Contract Price.
1. Marshall	Primary	Westville street	Maginnis, Walsh & Sullivan	$122,178 00
2. William E. Russell	Grammar,	Columbia road	James Mulcahey	183,878 00
3. Washington	Grammar,	Norman street	Everett & Mead	319,720 00
4. Farragut	Primary	Kenwood road	Wheelwright & Haven	148,761 00
5. Ellis Mendell	Primary	School street	Andrews, Jaques & Rantoul	122,056 00
6. Paul Jones	Primary	Horace street	Whitman & Hood	122,916 00
7. Jefferson	Grammar,	Heath street	Shepley, Rutan & Coolidge	214,065 00
8. Christopher Columbus	Primary	Tileston street	Winslow & Bigelow	172,213 00
9. Mather	Grammar,	Meeting House Hill,	Cram, Goodhue & Ferguson	272,297 00
10. Addition Francis Parkman	Primary	Walk Hill street	Charles B. Perkins	34,739 00
11. Thomas Gardner	Grammar,	Brentwood street	Stickney & Austin	141,192 00
12. Oliver Hazard Perry	Grammar,	E. Seventh street	Clough & Wardner	143,317 00
13. John Boyle O'Reilly	Primary	Dorchester street	Andrews, Jaques & Rantoul	112,348 00
14. Dearborn	Grammar,	Orchard park	Edwin J. Lewis, Jr.	223,454 00
15. Oliver Wendell Holmes	Grammar,	School street	A. W. Longfellow	186,398 00
16. Samuel W. Mason	Primary	Norfolk avenue	John A. Fox	121,229 00
17. John G. Whittier	Primary	Southern avenue	Parker & Thomas	72,193 00
18. James Otis	Primary	Marion street	Winslow & Bigelow	107,213 00
19. Tuckerman	Primary	E. Fourth street	Charles K. Cummings	77,065 90
20. William E. Endicott	Primary	McLellan street	James E. McLaughlin	83,359 00
21. Sarah J. Baker	Primary	Perrin street	Schweinfurth & Craig	158,820 00
22. Nathaniel Hawthorne	Primary	Howard avenue	William H. McGinty	69,180 00
23. Charlestown High	High	Monument square	Stickney & Austin	306,137 00
				$3,514,728 90

Prices, and Percentage of Changes, etc., on all Buildings Contracted for by the Commission.

Finished Contract Price.	Per Cent. of Changes.	Date of Building Contract.	Contract Date of Completion.	Building Actually Finished.	Bonus or Penalty.
$124,467 65	1.87 Inc.,	July 31, 1902,	Aug. 8, 1903,	Aug. 7, 1903,	1 day's bonus = $20.
188,524 56	2.59 Inc.,	Aug. 25, 1902,	Oct. 18, 1903,	Oct. 26, 1903,	8 days' forfeiture = $160.
325,541 60	1.82 Inc.,	Dec. 6, 1902,	Mar. 6, 1904,	Sept. 9, 1904,	Contractor in insolvency.
150,526 43	1.18 Inc.,	Dec. 17, 1902,	Oct. 31, 1903,	Jan. 15, 1904,	Damages offset by claim for blasting.
122,267 20	.17 Inc.,	Jan. 27, 1903,	Jan. 27, 1904,	Apr. 14, 1904,	Damages for delay = $100.
114,370 35	6.95 Dec.,	Jan. 7, 1903,	Jan. 7, 1904,	Apr. 15, 1904,	Architect report delay unavoidable.
210,890 49	1.48 Dec.,	Feb. 11, 1903,	Apr. 11, 1904,	June 11, 1904,	Damages for delay = $589.
173,512 08	.75 Inc.,	July 16, 1903,	Aug. 11, 1904,	Sept. 10, 1904,	25 days' forfeiture = $1,250.
[1] 289,332 99	6.25 Inc.,	Sept. 29, 1903,	Jan. 27, 1905,	Feb. 10, 1905,	Architect report delay unavoidable.
36,976 99	6.44 Inc.,	Sept. 29, 1903,	Sept. 9, 1904,	Sept. 9, 1904,	Completed on time.
[4] 140,267 57	.65 Dec.,	Jan. 30, 1904,	Feb. 1, 1905,	June 15, 1905,	Claim for damages unsettled.
146,145 63	1.97 Inc.,	Feb. 2, 1904,	Jan. 1, 1905,	Jan. 3, 1905,	Architect report delay unavoidable.
[4] 112,839 00	.43 Inc.,	Mar. 2, 1904,	Nov. 15, 1904,	Nov. 15, 1904,	Completed on time.
213,866 11	4.29 Dec.,	May 21, 1904,	July 1, 1905,	Dec. 16, 1905,	Claim for damages unsettled.
[2] 195,648 02	4.96 Inc.,	May 21, 1904,	Aug. 1, 1905,	Aug. 1, 1905,	Completed on time.
118,324 64	2.39 Dec.,	June 22, 1904,	Aug. 1, 1905,	Aug. 1, 1905,	Completed on time.
[3] 74,736 15	.52 Inc.,	July 27, 1904,	July 15, 1905,	Sept. 13, 1905,	Contractor in insolvency.
107,818 00	.56 Inc.,	Oct. 7, 1904,	Sept. 7, 1905,	Aug. 5, 1905,	27 days' bonus = $1,350.
[4] 77,423 25	.46 Inc.,	Dec. 8, 1904,	Aug. 15, 1905,	Aug. 15, 1905,	Completed on time.
[4] 78,951 60	5.28 Dec.,	Feb. 4, 1905,	Jan. 29, 1906,	....	Unfinished.
[4] 161,058 38	1.40 Inc.,	Mar- 27, 1905,	Feb. 27, 1906,	Dec. 12, 1905,	77 days' bonus = $3,850.
[4] 67,952 00	1.77 Dec.,	Apr. 26, 1905,	Jan. 23, 1906,	....	Unfinished.
[4] 294,626 30	3.75 Dec.,	Nov. 20, 1905,	Mar. 8, 1907,	....	Unfinished.
[5] $3,526,066 99					

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[1] Includes extra, amounting to $12,882.60, for four additional rooms in basement. See page 4 of report.

[2] Includes extra, amounting to $7,620, for additional grading, planting, etc. See page 5 of report.

[3] Includes contract, amounting to $2,150, with Vacuum Cleaner Company. See page 8 of report.

[4] Figures given as of February 1, 1906.

[5] If from this total were deducted the cost of the four additional rooms, Mather School, the cost of additiona grading, Oliver Wendell Holmes, the cost of experimental system of vacuum cleaning, John G. Whittier School, and the net amount of bonus and penalty, $3,121, the result would be $3,500,293.39, or $14,435.51 less than the total of "Original contract price."

APPENDIX VIII.

AIR MOISTENING IN SCHOOL BUILDINGS.

We respectfully submit a report on air moistening in the schools as per your request.

The tests which have been made are confined to two schools, the Farragut School, Huntington avenue, and the Andrews School, Genesee street. These tests were partly made last year and continued this, with a view to determining the following questions:

1. How high a percentage of moisture is desirable?
2. Can a given percentage be maintained?
3. How much attention is necessary to maintain the desired percentage of moisture?

Without going into details, more than is necessary, we will try to answer these queries.

The answer to the first one would be that from 40 to 50 per cent. is desirable in cold weather. It was found that while on mild, bright days even a higher per cent. than 50 was permissible, on cold days it was objectionable in some rooms.

The moisture in the Andrews School was presumably equally distributed to the various rooms. On the sunny side with 50 per cent. moisture there was very little condensation on the windows. On the shady side it was objectionable and the teachers complained of a dampness in the air. This was probably due to the extra cooling of the air next windows and walls on the shady side, which tended to raise the percentage of humidity in part of the room to perhaps 70 per cent. or more.

Considering buildings then as a whole, about 40 per cent. humidity in very cold weather and 50 per cent. in ordinary winter weather seems about right.

To determine the answer to the second question we have tried to control the percentage by means of humidostats.

The apparatus used is briefly described as follows:

A fan and radiators controlled automatically to deliver air to the rooms at a uniform temperature of 67 degrees Fahrenheit. (This particular school has steam coils in the rooms to make up the necessary heat over what enters with the air to rooms.) Steam pipes perforated to blow steam directly into the air entering; a valve on supply to pipes to control flow of steam; an humidostat in the school-room to control automatically the valve on steam supply pipe; a recording hygrodeik to record the per cent. of moisture in the rooms.

The records show that the humidostat did open and close the valve so that there was a per cent. ranging about five points each way above and below the set point when the apparatus was properly run. Greater variations are recorded, but a cause can be given in nearly every case. The experiment is limited to one humidostat, and how permanently reliable humidostats would prove is not determined.

The third question is an important one, and can only be answered in a general way.

With the present state of development of this apparatus, for this work, a great deal of attention is necessary. The simplest method and least expensive to install for the average building is the one at the Andrews School. It is the nearest to a scientific system, as it attempts to control the percentage of humidity in a simple way.

Two phases have been developed which tend to show that especial care is needed, and they are as follows:

First. — So much steam taken from the boiler requires constant care to see that the water line does not get down to the danger point.

Second. — There has been complaint of a bad odor in the rooms, and this was due to the sediment and dirty water in the boilers.

There is a question of whether the water can be kept sufficiently clean in the boilers to obviate this.

The alternative of having a pan of water, with submerged steam pipes and air passing over the surface on its way to the rooms, has advantages, but this water pan would have to be kept clean, and there are many places where it is not practical, on account of the space required.

The situation, we think, is fairly stated by saying that the humidifying of school-rooms is practical and can be regulated, but the results with the average janitor, due to the attention necessary, are not commensurate with the expense and maintenance of the installation.

Respectfully submitted,

HOLLIS FRENCH & ALLEN HUBBARD,
Consulting Engineers.

NOTE. — To the above statement, the Board would add that, in its opinion, the moistening of the air is so desirable that it proposes to continue experiments and see if results cannot be obtained that will justify the more general use of moistening apparatus, both on account of its effect on the health of the children and on account of cleanliness in the buildings. They believe that the expenditure of money or of time necessary to moisten the air will be well spent.

APPENDIX IX.

REPORT ON SCHOOL FURNITURE.

There is relatively little to report this year in regard to the matter of school furniture. The work has consisted, in the main, first, of a continuation of the old routine of installation of the adjustable furniture in the new schools; second, of oversight of the use of such furniture as was already installed in the older schools; third, of the perfecting of a new model of seat-back for certain scholars of the higher grades. This last, perhaps, needs a few words of explanation.

The designs for the two forms of seat-back now in actual use were developed to meet what a careful testing of individuals showed to be the average lumbar spine curves in children of primary and grammar school age. As the time went on and these models came into actual use for hundreds of scholars, it became obvious that one factor had not been sufficiently considered, namely, the change in pelvic and lumbar curves in certain girls at, and beyond, the age of puberty. There is, of course, at this age a marked physiological and anatomic change. The boy changes in size only, the girl in shape as well, and no change in height adjustment can make it practicable to fit male and female scholars with any single form of back-rest when once the females have undergone this change.

This change of curves affects but a small proportion of grammar school scholars in sufficient degree to be worth considering, yet even this small proportion must be considered. It was obvious, moreover, that we must have furniture that would accommodate high school as well as grammar grades.

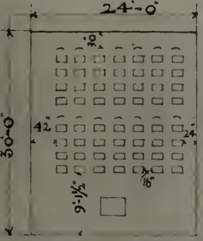
Accordingly, such provision has been made by the designing of a special seat-back. It is our intention that this seat-back shall be used, not for all upper grade scholars, not even for all girls of these upper grades, but only for such as may not be adequately accommodated by the other models. That this might be done, it was necessary to design a proper seat-back that could be used only as needed for special individuals, and therefore used only in special instances in rooms provided with the furniture suited to the average of scholars of the given grade.

After a good deal of trial and experiment, a model has been evolved which seems to meet all these requirements adequately. The points to be considered are that the girl of the given age, thirteen to fifteen, or thereabouts, may, in certain instances, show:

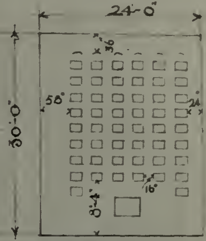
(*a*.) An increased breadth of hips.

·CITY·OF·BOSTON
·SCHOOLHOUSE·DEPARTMENT·

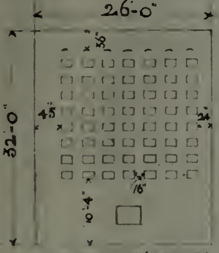
·STANDARD·LAYOUT·OF·PUPILS·DESKS·



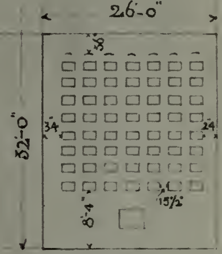
·GRADE···I·AND·II·
·56·DESKS·12"X18"
2'-4½"·BACK·TO·BACK·
·GRADE·III·2'5"·BACK·TO·BACK·



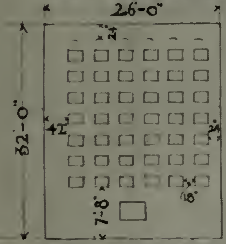
·GRADE ·IV·
·50·DESKS·15"X21"
·2'-4" BACK·TO·BACK·



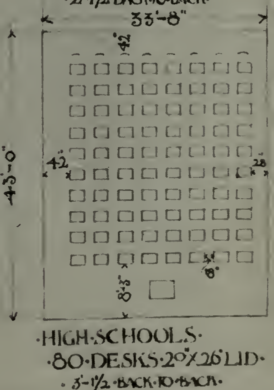
·GRADE·IV·56·DESKS·
·15"X21" 2'-4" BACK·TO·BACK
·GRADE·V·2'-4½" BACK·TO·BACK·
·GRADE·VI·2'-5½" BACK·TO·BACK·



·GRADE·VII·
·56·DESKS·16"X23"·LID·
·2'-7" BACK·TO·BACK·
·GRADE·VIII·AND·IX·
·2'-7½" BACK·TO·BACK·



·HIGH··SCHOOLS·
·42·DESKS·20"X26"
·LID·
3'-1½" BACK·TO·BACK·



·HIGH·SCHOOLS·
·80·DESKS·20"X26" LID·
·3'-1½"·BACK·TO·BACK·

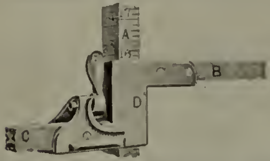
CITY OF BOSTON

SCHOOLHOUSE DEPARTMENT

STANDARD GAUGE

FOR ADJUSTING

CHAIRS AND DESKS

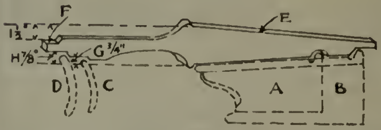


GAUGE CONSISTS OF STICK (A), ON ONE SIDE ORDINARY INCH SCALE; ON ANOTHER SIDE A SCALE GRADUATED TO 1/16 INCH DIVISIONS; ON STICK (A) SLIDES A CROSS ARM (D) HAVING AFFIXED THERETO VERTICAL ARM (B); ON OPPOSITE SIDE SHORTER HORIZONTAL ARM (C); VERTICAL DISTANCE BETWEEN TOPS OF (B) AND (C) IS EQUIVALENT TO THICKNESS OF SEAT; (E) IS A LEVER BINDING CROSS ARM (D) AT ANY HEIGHT ON STICK (A); UPPER SURFACE OF (D) INDICATES MEASUREMENTS ON STICK (A). THE DISTANCE ON 1/16 INCH SCALE GIVES HEIGHT IN INCHES OF TOP EDGE OF DESK NEAREST BODY OF PUPIL. THE DISTANCE ON 1 INCH SCALE GIVES HEIGHT OF TOP OF SEAT.

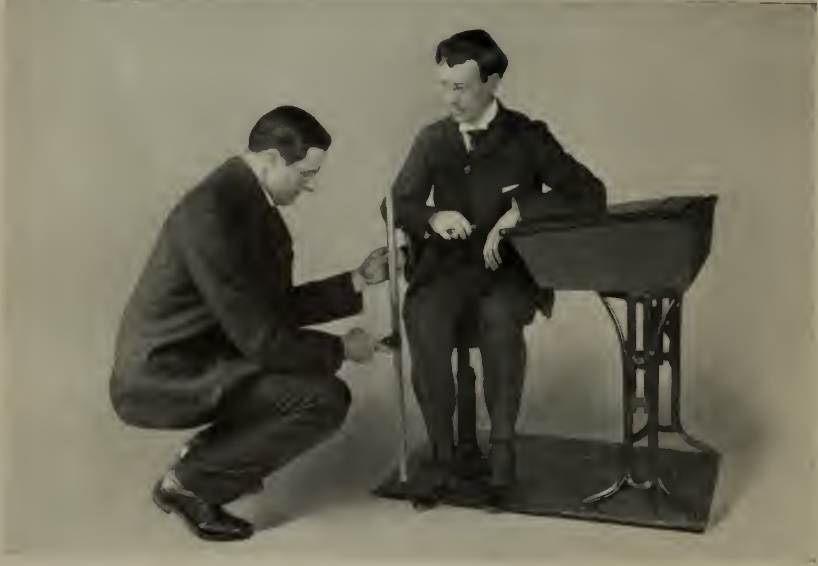
CITY OF BOSTON

SCHOOLHOUSE DEP'T

STANDARD GAUGE FOR ADJUSTING CHAIR BACKS ……



- A SMALLEST DESK 12" X 15"
- B MEDIUM DESK 15" X 21"
- C BACK REST OF CHAIR FOR SMALL PUPILS
- D BACK REST OF CHAIR FOR MEDIUM PUPILS
- E REVERSE SIDE OF GAUGE FOR 16" X 23" DESKS
- F HEIGHT AND DISTANCE FOR BACK REST OF CHAIR USED WITH 16" X 23" DESKS
- G DISTANCE OF BACK REST ABOVE DESK FRONT 3/4"
- H DISTANCE OF BACK REST ABOVE DESK FRONT 7/8"



(*b.*) An increased antero-posterior curve of the lumbar spine.

(*c.*) An increased height from seat to waist, due not to bone change, but to the increase of fat tissue in the gluteal region (and, incidentally, to the increased bulk of clothing that comes with the assumption of adult styles).

It is not in all cases that these changes occur. Even with the completion of the changes of this period, many mature and normal girls show little of this special change in curves, but the minority who do show such change must be comfortably accommodated, and for this reason this new seat-back has been designed, showing the following modifications:

(1.) An increase of the lumbar curve in the antero-posterior plane.

(2.) An increase in the maximum height to which the back may be adjusted.

(3.) A broadening of the curves of the seat as a whole.

(4.) A flattening of the lower curve, corresponding to the maximum breadth of hips, with a rounding off of the lower corners, which in the model of "Type B" were properly left somewhat prominent.

The increase of the lumbar curve is rendered necessary by the actual anatomical increase of this curve in these larger girls.

The increase of height is necessary because the rapid growth of fat on the hips and the increased bulk of clothing give a much increased sitting height, an increase beyond the ordinary range of adjustment.

The broadening and flattening of the transverse curves is a necessary provision to accommodate the actual increase in the breadth of the hips.

The requirements have been carried out actually by providing a different wooden back, set at a slightly different pitch on a new type of casting. This casting, however, fits into the ordinary back upright, and the ordinary seat-back may be exchanged for this with no more trouble than unscrewing and screwing up the wing-nut that clamps the seat-back in its proper place.

As yet this new "Type C" is not in actual use, but the model has been tried on many suitable pupils in the school-rooms and promises to be very satisfactory. The plan is to have rooms for high school scholars and the seventh, eighth and ninth grades set up with the usual "Type B" furniture, to have this adjusted, and then to have the new seat-backs at hand in sufficient number so that they may be substituted for the routine back where needed, without calling for any other change.

It is impossible to say in advance how many scholars of a given room will need this change. It applies of course to girls only, and to a proportion of the girls that varies not only with age, but with race, etc., hence different for each section of the city, even for each school.

The only practicable method is, as above noted, to leave this matter to personal observation by the teacher, who, if interested, should be perfectly competent to decide this matter.

In regard to the use of the adjustable furniture in general, it is becoming more and more practicable to rely on the co-operation of the teachers. As the system grows more familiar, each teacher becomes a fair judge of the proper adjustment, and, being on the ground, can have changes made by the janitor which formerly would have had to await the occasional visit of inspection.

It would be desirable to have some system of desk and seat inspection that would relieve the teachers and janitors of all this, but this seems impracticable, at least for the present, yet the visits of inspection, though relatively infrequent in any one school, seem when aided by the teacher's interest to be enough.

As things stand the furniture is adequately adjusted to the scholars and seems to be very satisfactory. Particularly in regard to the much discussed seat-back, it may be said that it gives adequate support, is comfortable and convenient, and yet, according to the teachers, tends to discourage and minimize faulty sitting positions. This of course does not apply to the largest girls, whose comfort is considered in the newly-designed back support.

Respectfully submitted,

F. J. COTTON, M.D.

APPENDIX X.

ARCHITECTS' SERVICES.

Every Architect employed by the Schoolhouse Commissioners of the City of Boston as the Architect for erecting a building is to perform the duties hereinafter provided.

SECTION 1. — *The Board.* — (*a.*) Is to furnish the Architect with the requirements and information for the design and construction of the building for which he is the Architect, and give the approximate cubical contents and proposed cost per cubic foot thereof;

(*b.*) Is to employ domestic engineers to confer with the Architect during the preparation of preliminary studies, and when these are accepted by the Board to advise the Architect in the details of their work, and make the necessary working drawings and specifications for, and have the direction of, the heating, ventilating and electric work for the building, said work being hereinafter designated as the domestic engineering;

(*c.*) Is to give the grade and lines of streets and adjoining lots;

(*d.*) Is to make all borings necessary to determine the quality of the foundations, and, on request of the Architect or of any person doing work on the building, furnish him full information relating to the above, the sewer, water, gas and electric service, and to the rights, restrictions and boundaries of the lot on which the building is to be constructed.

SECT. 2. — *The Architect.* — (*a.*) Is to consult and advise with the Board and make such preliminary studies as will acquaint the Board with the contemplated arrangement, design, construction and cubical contents of the building, and enable them to agree with the Architect upon a definite limit of cost therefor, and to accept said preliminary studies as the basis of working drawings and specifications;

(*b.*) Is to make, upon the basis of said preliminary studies, one complete set of working drawings in ink on tracing cloth, floor and framing plans, sections and elevations at one-eighth scale and such detail drawings on a larger scale as are necessary to explain the specifications;

(*c.*) Is to furnish, revise and correct for the printer one complete set of specifications for everything to be furnished or done in constructing the building, except the domestic engineering;

(*d.*) Is to loan to the Board, to make blue prints therefrom, the said set of working drawings;

(*e.*) Is to re-study and if necessary re-draw, without charge, any or all of said drawings and specifications, if, owing to an unwarranted departure from the approved preliminary studies or to a needlessly extravagant or elaborate interpretation of them in said drawings and specifications, the lowest bid for doing the work in accordance therewith over-runs the limit of cost agreed upon by the Architect and the Board;

(*f.*) Is, upon the signing of contract, to deliver to the Board, to remain their property, two sets of blue prints mounted on cloth taken from the said set of working drawings, a perspective drawing of the exterior of the building suitable for reproduction, and at the conclusion of the work a complete set of working drawings on tracing cloth, either the set previously referred to or a copy therefrom, which shall be corrected to agree with and embody all changes made during construction;

(*g.*) Is to make application for a building permit to the Building Department on a form signed by the Chairman of the Board, and deliver to the Building Department two sets of such blue prints from the said set of working drawings as may be required by the Building Department (the Board furnishing specifications to the Building Department);

(*h.*) Is to have general supervision of the domestic engineering and be the Architect of all other work to be done under any written contract for the construction of the building and render the full usual Architect's services and supervision for such other work;

(*i.*) Is, in the form prescribed by the Board, to make all estimates and allowances for payments under any contract in which he is made the Architect of the work, and such estimates for the domestic engineering are to be accompanied by certificates of said Engineers as to their accuracy;

(*j.*) Is to advise with the Board on any changes in the building contemplated by the Board, and is to order changes when required by the Board so to do;

(*k.*) Is to cause the drawings and specifications furnished by him to conform to all regulations of law and public authorities, and to be in accordance with established methods of building construction, faithfully carry out all the foregoing provisions, use all proper knowledge, skill and care therein and be accountable for any failure so to do.

SECT. 3. — The City, as full compensation for the services aforesaid, is to pay the Architect 2½ per cent. upon the cost of the domestic engineering, and 5 per cent. upon the cost of all other work, payments to be made as follows: 2½ per cent. upon all contracts other than those for domestic engineering is to be paid on the signing of such contracts, and thereafter 2½ per cent. upon the value of the materials and labor, as specified in each estimate for payment under the contract, is to be paid on the making of the estimate, until the full payment aforesaid is made, and if any thereof remains unpaid at the completion of the work it is then to be paid. When preliminary studies are completed the value of the Architect's services to date shall be reckoned one-fifth of the estimated total commission; when working drawings and specifications are ready for contract, the value of his services to date shall be reckoned as three-fifths of said commission. If the Board discontinues the services of the Architect at any intermediate stage the value of his services shall be reckoned proportionately.

Sect. 4. — When for any reason other than those stated in Section 2, paragraph *e*., above, the Board shall set aside the whole or any part of an Architect's studies, drawings and specifications while retaining him to prepare corresponding new studies, drawings and specifications for the same school building, the City shall pay the Architect for the work thus set aside a sum not exceeding three times the actual cost of draughting, and the new work shall be paid for on a commission basis as stated in Section 3, above.

Sect. 5. — In the above agreement the term "building" is used to define not only the structure itself, but all work in connection with it committed to the Architect by the order of the Board, as fencing, grading, roads, walks, planting, decorative painting and sculptural decoration.

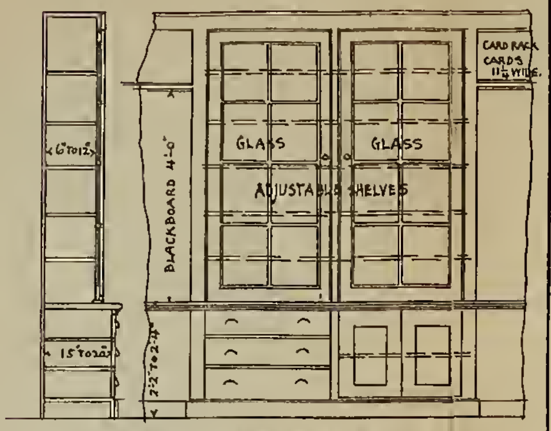
ALLIED PRINTING TRADES UNION LABEL COUNCIL BOSTON MASS

APPENDIX XI.

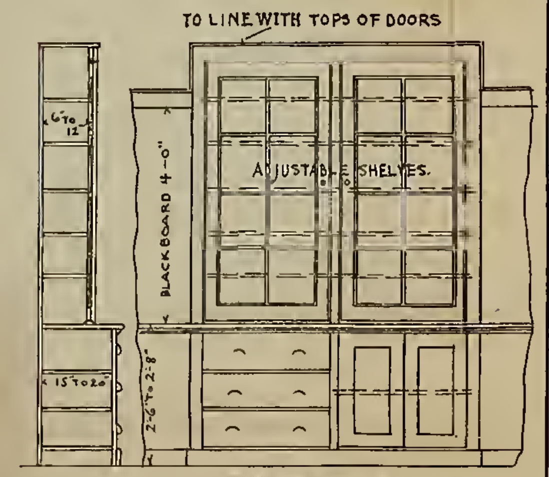
STANDARDS OF GENERAL DETAIL

CITY OF BOSTON SCHOOLHOUSE DEPARTMENT

BOOK CASES

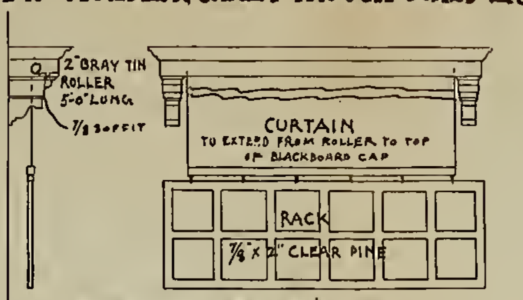


BOOK CASE FOR PRIMARY SCHOOLS

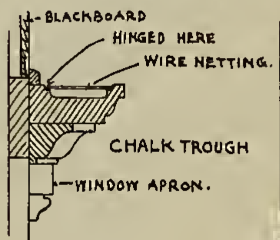


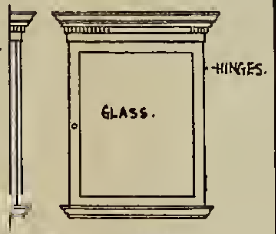
BOOK CASE FOR GRAMMAR SCHOOLS

MAP HOLDER: CHALK TROUGH BOXES ETC


2" GRAY TIN ROLLER 5'-0" LONG
7/8 SOFFIT
CURTAIN
TO EXTEND FROM ROLLER TO TOP OF BLACKBOARD CAP
RACK
7/8" X 2" CLEAR PINE

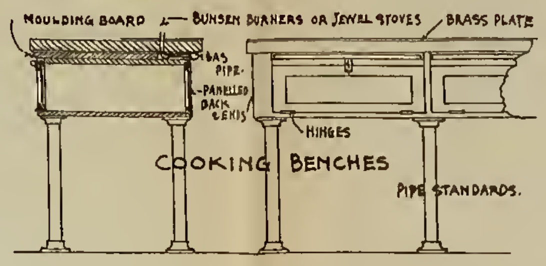
MAP HOLDER SCALE ½" = 1 FOOT
RACK TO CLEAR CAP MOULDINGS OF BLACKBOARD
AND TO PULL DOWN OVER BLACKBOARD

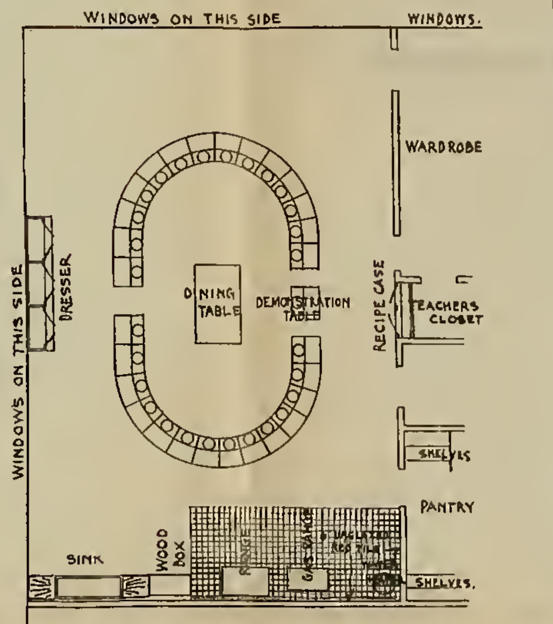




BULLETIN BOARD.

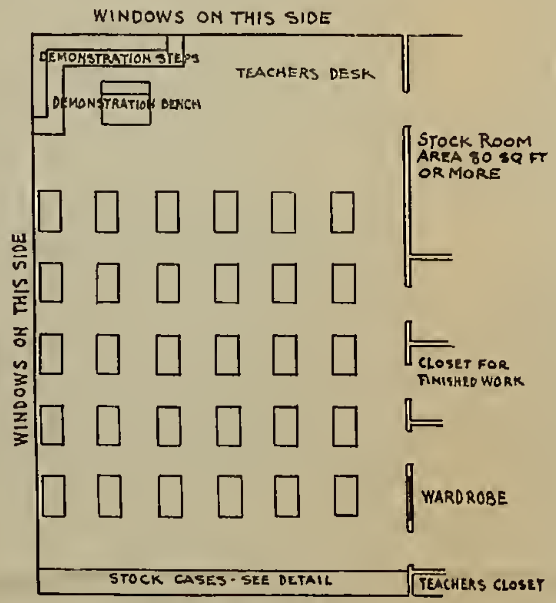
COOKING ROOM & FITTINGS



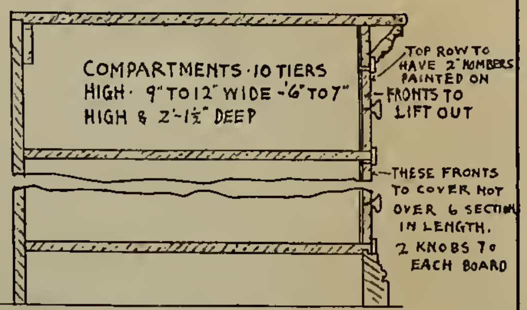


PLAN OF COOKING ROOM

MANUAL TRAINING ROOM

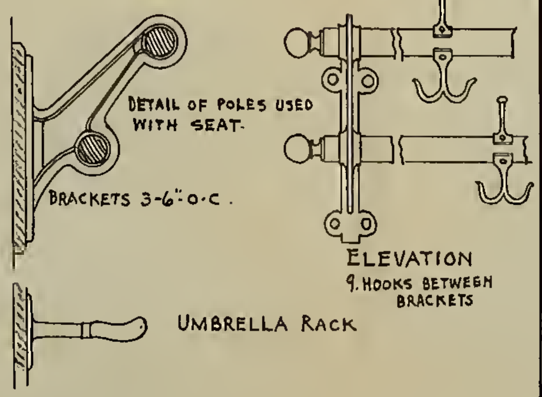


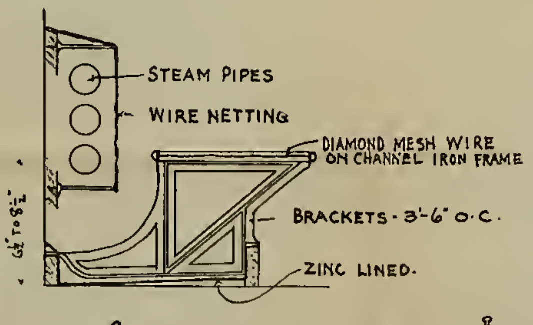
PLAN OF MANUAL TRAINING ROOM

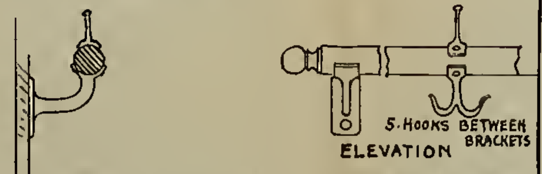

COMPARTMENTS 10 TIERS HIGH 9" TO 12" WIDE - 6" TO 7" HIGH & 2'-1½" DEEP
TOP ROW TO HAVE 2" NUMBERS PAINTED ON
FRONTS TO LIFT OUT
THESE FRONTS TO COVER NOT OVER 6 SECTIONS IN LENGTH.
2 KNOBS TO EACH BOARD

DETAIL OF STOCK CASES

WARDROBE FITTINGS

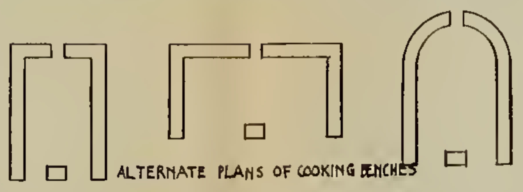


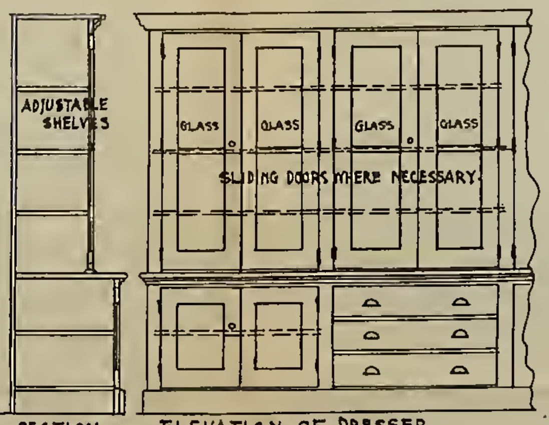




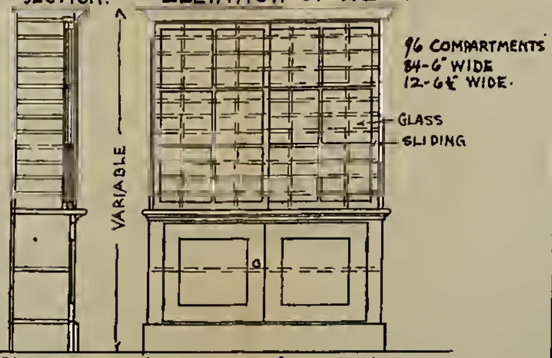
DETAIL OF CLOTHES HOOKS TO BE USED WHEN ALL SIDES OF WARDROBES ARE UTILIZED.

COOKING ROOM FITTINGS





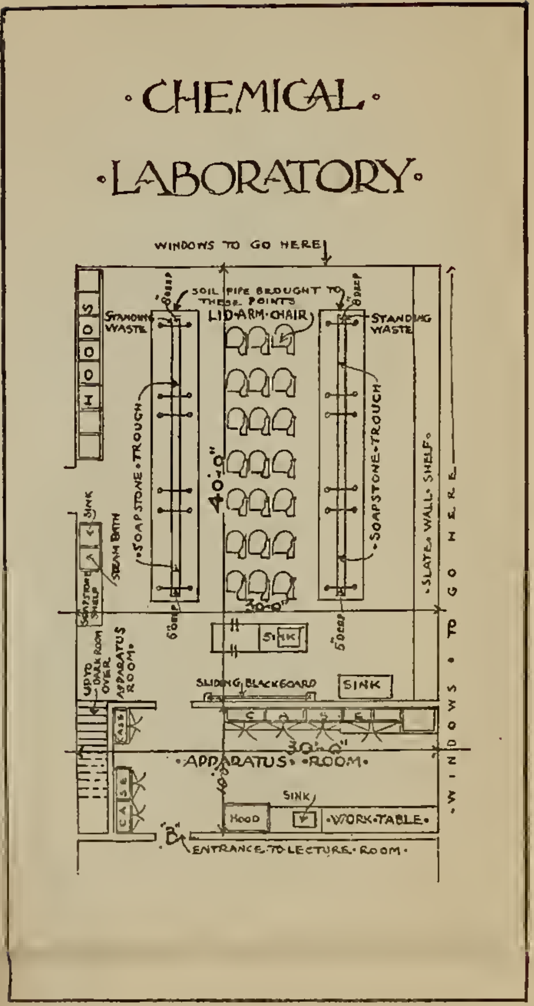
SECTION. ELEVATION OF DRESSER

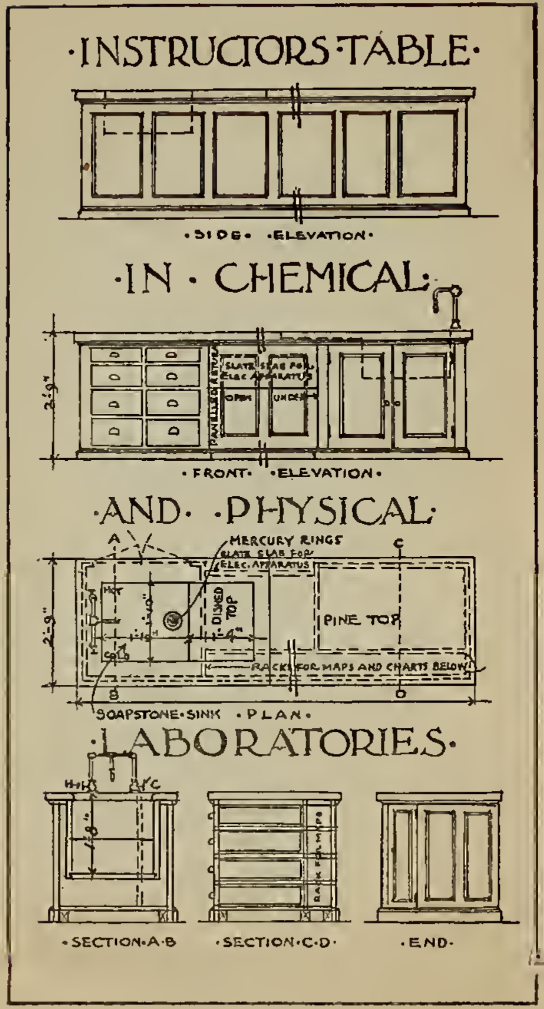


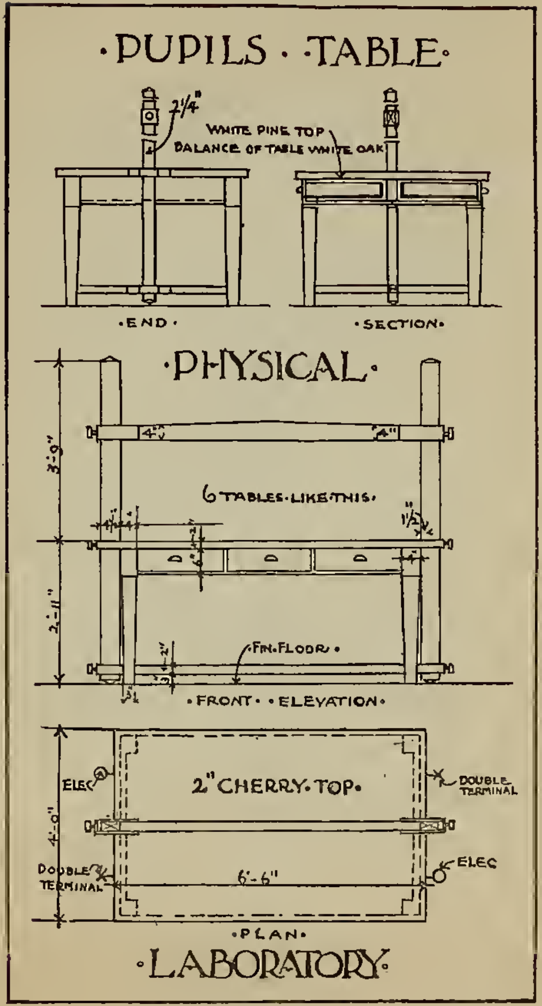
SECTION ELEVATION OF RECIPE CASE

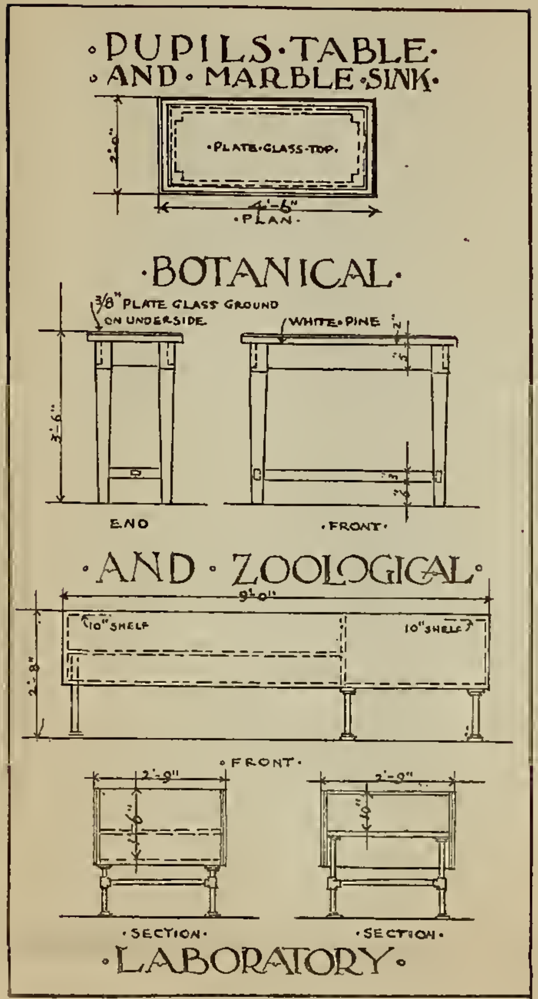
·HIGH· ·SCHOOL· ·STANDARD· ·FITTINGS·

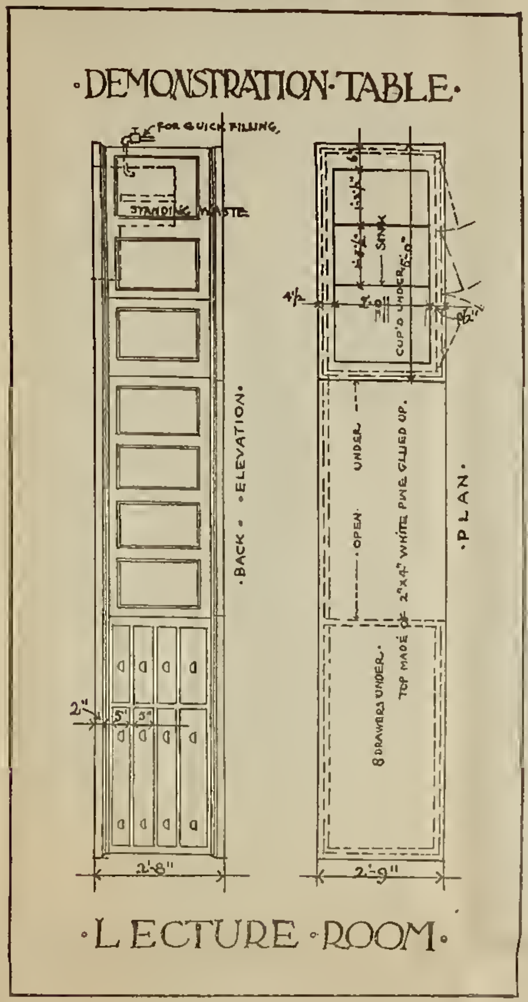
·CITY· OF ·BOSTON·
·SCHOOLHOUSE·DEPARTMENT·

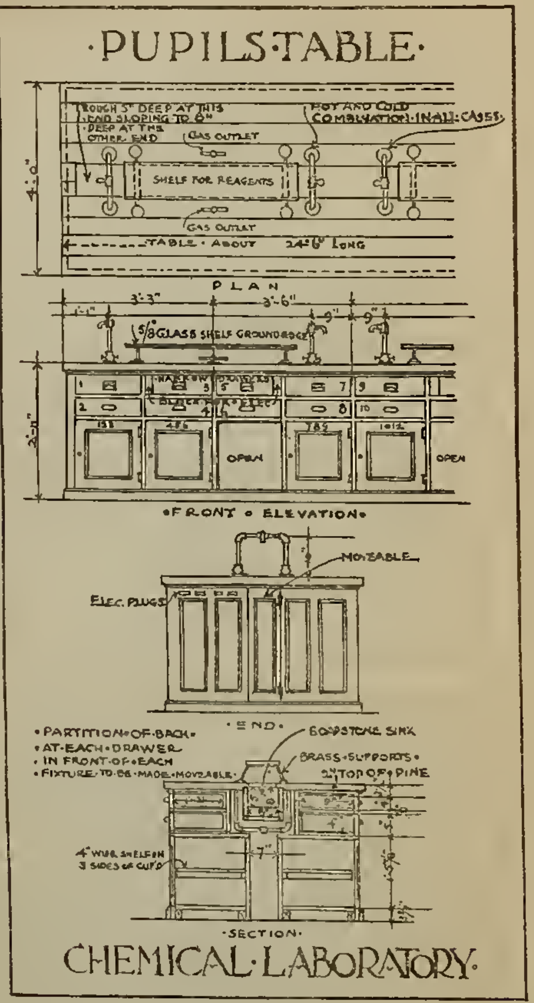

·CHEMICAL·
·LABORATORY·

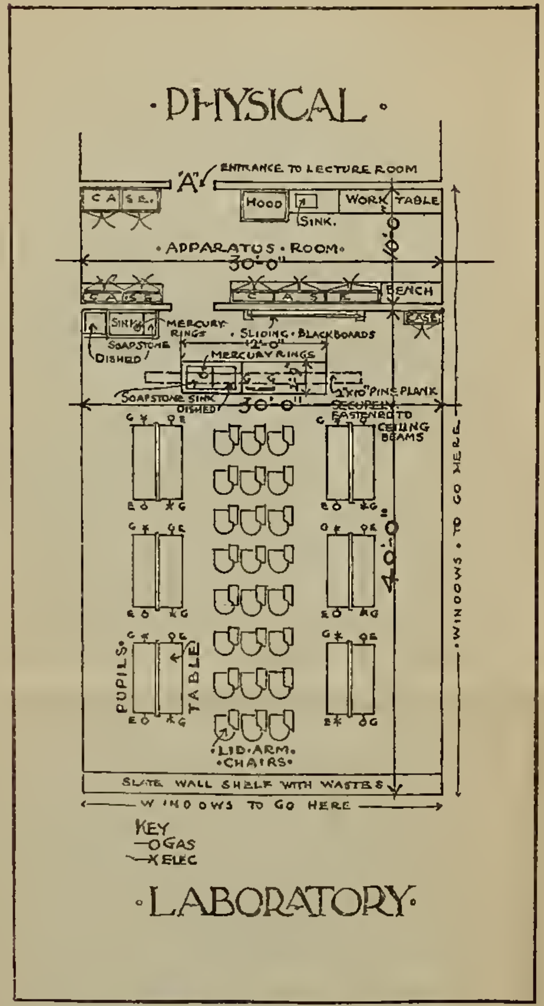

·INSTRUCTORS·TABLE·
·IN·CHEMICAL·
·AND·PHYSICAL·
·LABORATORIES·

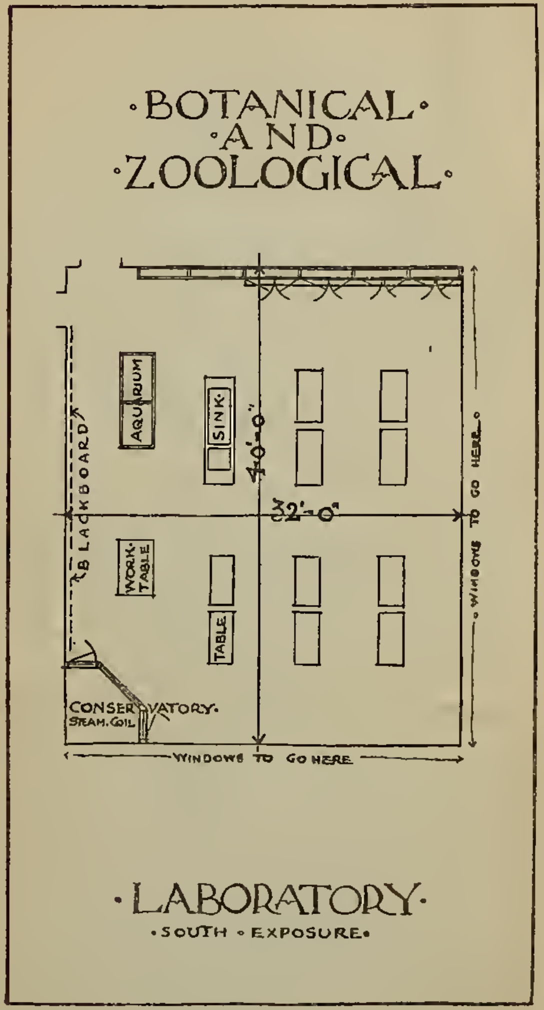

·PUPILS· ·TABLE·
·PHYSICAL·
·LABORATORY·

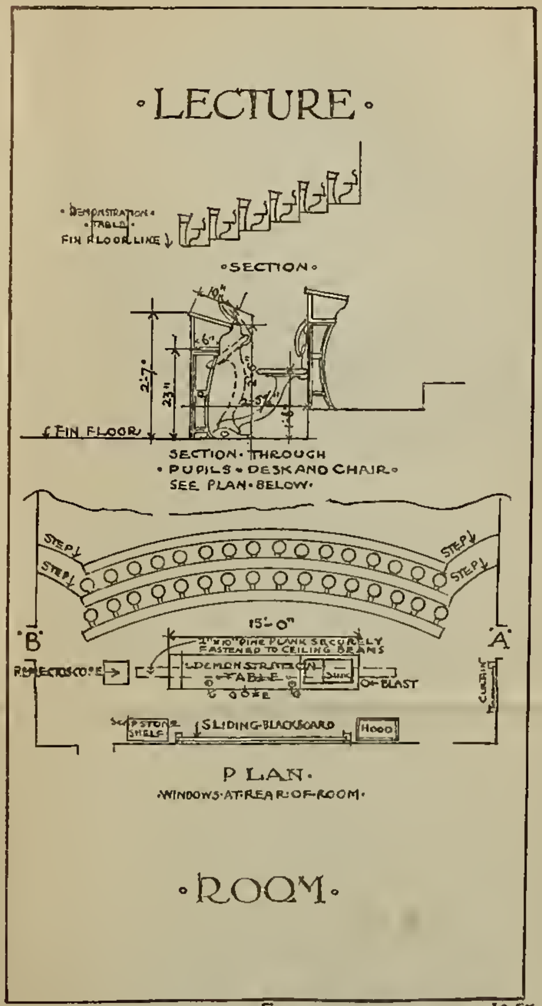

·PUPILS·TABLE·
·AND·MARBLE·SINK·
·BOTANICAL·
·AND·ZOOLOGICAL·
·LABORATORY·

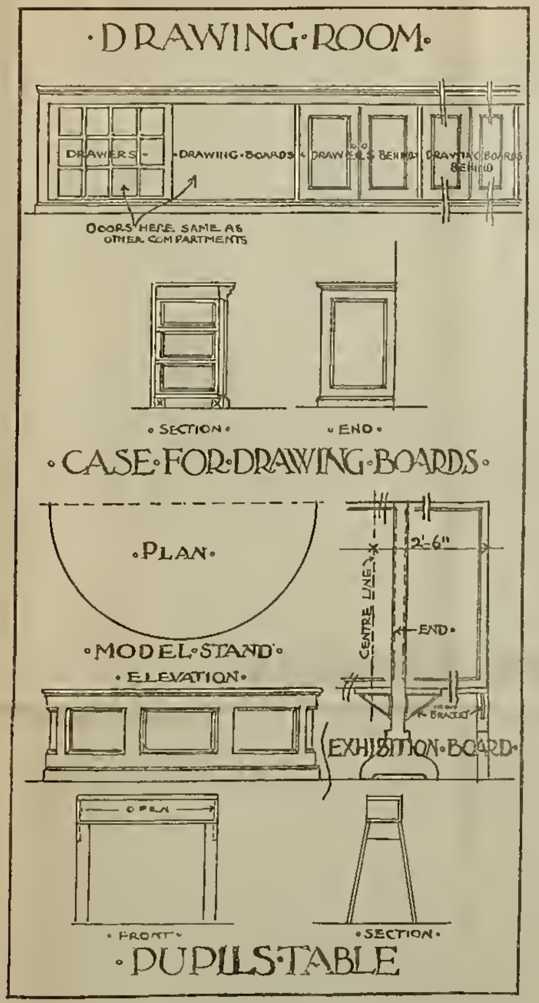

·DEMONSTRATION·TABLE·
·LECTURE·ROOM·


·PUPILS·TABLE·
CHEMICAL·LABORATORY·

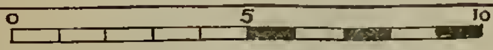

·PHYSICAL·
·LABORATORY·


·BOTANICAL·
·AND·
·ZOOLOGICAL·
·LABORATORY·
·SOUTH· ·EXPOSURE·


·LECTURE·
·ROOM·

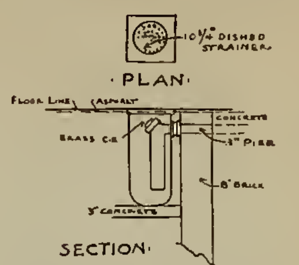

·DRAWING·ROOM·
·CASE·FOR·DRAWING·BOARDS·
·MODEL·STAND·
·PUPILS·TABLE·

·SCALE·OF·PLANS·

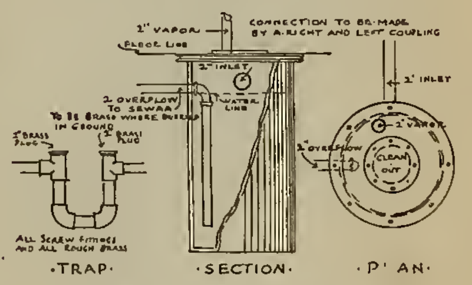

·SCALE·OF·DETAILS·

PLUMBING STANDARDS SCHOOLHOUSE DEPARTMENT

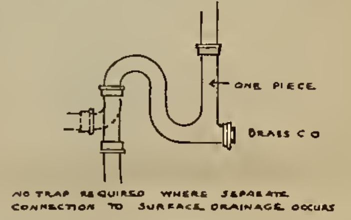
FLOOR-WASH



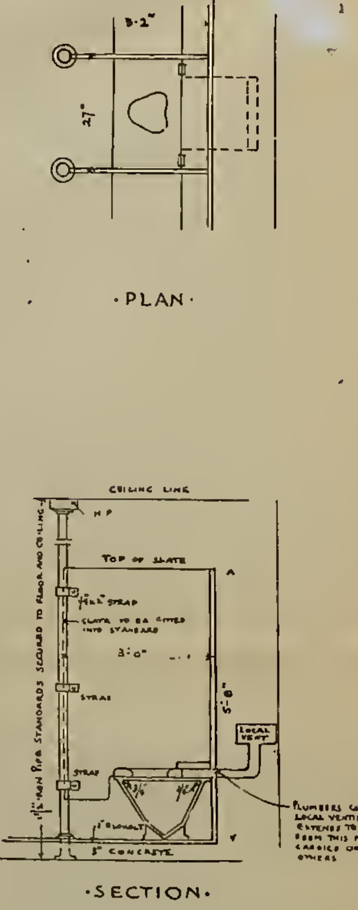
BLOW-OFF-TANK



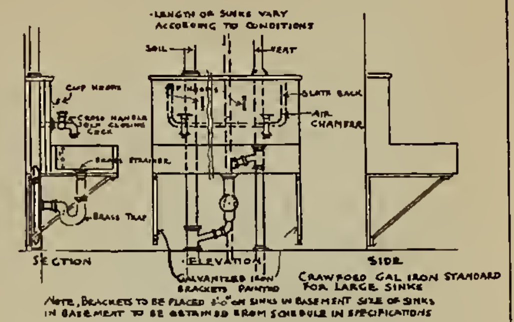
CONDUCTOR-TRAP


ONE PIECE
BRASS C.O.
NO TRAP REQUIRED WHERE SEPARATE CONNECTION TO SURFACE DRAINAGE OCCURS

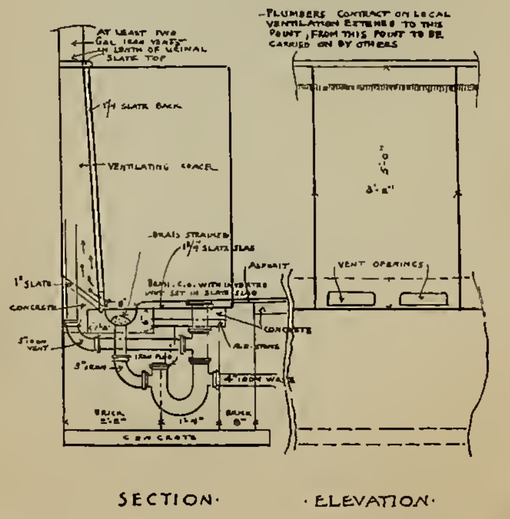
IRON-LATRINE


3-2"
27"
PLAN
CEILING LINE
H P
TOP OF SLATE
1¼"x2" STRAP
SLATE TO BE FITTED INTO STANDARD
3'-0"
5'-0"
STRAP
STRAP
LOCAL VENT
1½" IRON PIPE STANDARDS SECURED TO FLOOR AND CEILING
1" ASPHALT
3" CONCRETE
PLUMBERS CONTRACT ON LOCAL VENTILATION EXTENDS TO THIS POINT, FROM THIS POINT TO BE CARRIED ON BY OTHERS
SECTION

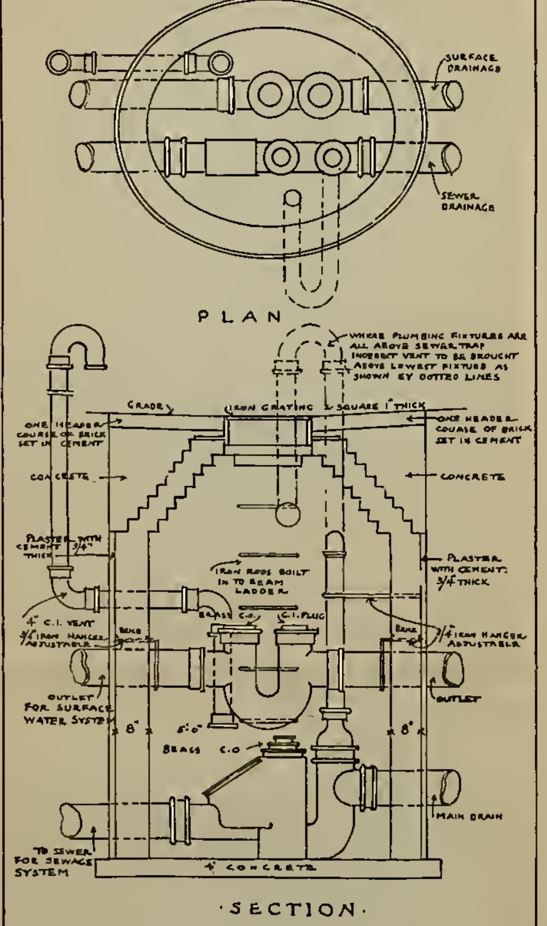
SLATE-SINK


LENGTH OF SINKS VARY ACCORDING TO CONDITIONS
SOIL
VENT
CUP HOOKS
CROSS HANDLE SELF CLOSING COCK
BRASS STRAINER
BRASS TRAP
SLATE BACK
AIR CHAMBER
SECTION
ELEVATION
SIDE
GALVANIZED IRON BRACKETS PAINTED
CRAWFORD GAL IRON STANDARD FOR LARGE SINKS
NOTE, BRACKETS TO BE PLACED 3'-0" ON SINKS IN BASEMENT SIZE OF SINKS IN BASEMENT TO BE OBTAINED FROM SCHEDULE IN SPECIFICATIONS

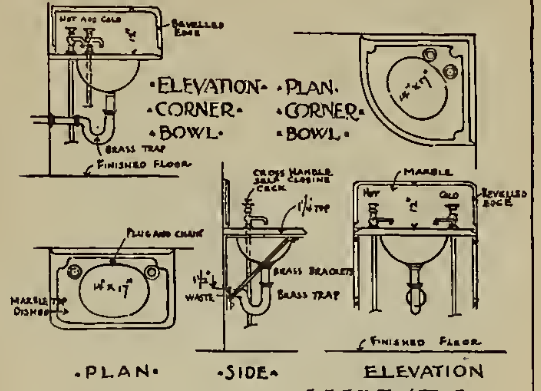
SLATE-URINAL


AT LEAST TWO GAL IRON VENTS IN LENGTH OF URINAL
SLATE TOP
1¼ SLATE BACK
VENTILATING SPACE
BRASS STRAINER
1½" SLATE SLAB
1" SLATE
CONCRETE
BRASS C.O. WITH INVERTED NUT SET IN SLATE SLAB
ASPHALT
CONCRETE
5" IRON VENT
3" IRON
4" IRON WASTE
BRICK
CONCRETE
PLUMBERS CONTRACT ON LOCAL VENTILATION EXTENDS TO THIS POINT, FROM THIS POINT TO BE CARRIED ON BY OTHERS
5'-0"
3'-2"
VENT OPENINGS
SECTION
ELEVATION

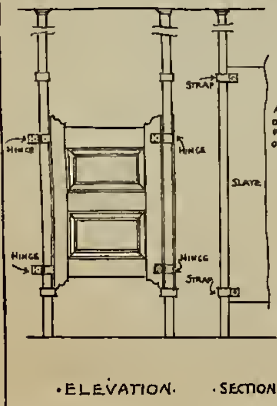
TIDE-TRAP


SURFACE DRAINAGE
SEWER DRAINAGE
PLAN
WHERE PLUMBING FIXTURES ARE ALL ABOVE SEWAR TRAP INDIRECT VENT TO BE BROUGHT ABOVE LOWEST FIXTURE AS SHOWN BY DOTTED LINES
GRADE
IRON GRATING 2' SQUARE 1" THICK
ONE HEADER COURSE OF BRICK SET IN CEMENT
ONE HEADER COURSE OF BRICK SET IN CEMENT
CONCRETE
CONCRETE
PLASTER WITH CEMENT 3/4" THICK
PLASTER WITH CEMENT 3/4 THICK
IRON RODS BUILT IN TO FORM LADDER
4" C.I. VENT
3/4 IRON HANGER ADJUSTABLE
BRASS C.O.
C.I. PLUG
BRICK
OUTLET FOR SURFACE WATER SYSTEM
OUTLET
8"
5'-0"
8"
BRASS C.O.
MAIN DRAIN
TO SEWER FOR SEWAGE SYSTEM
4' CONCRETE
SECTION

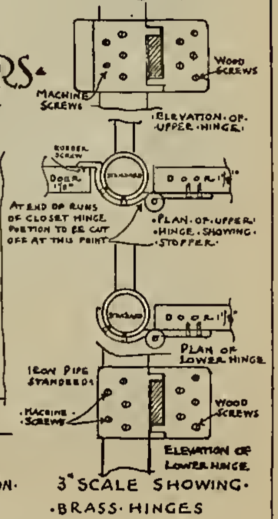
LAVATORY-BOWLS



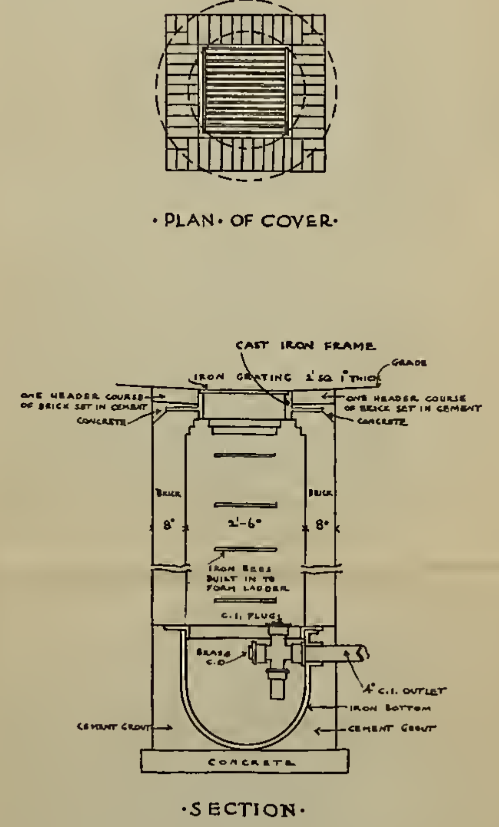
WATER-CLOSET-DOORS



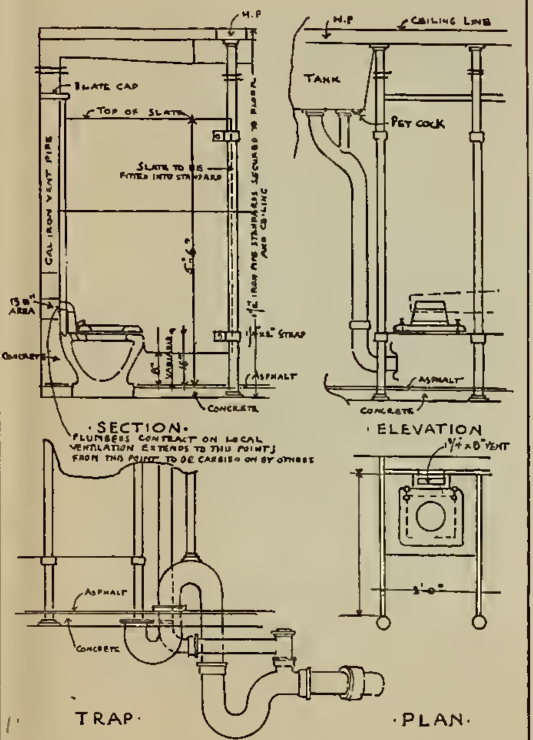
HINGES



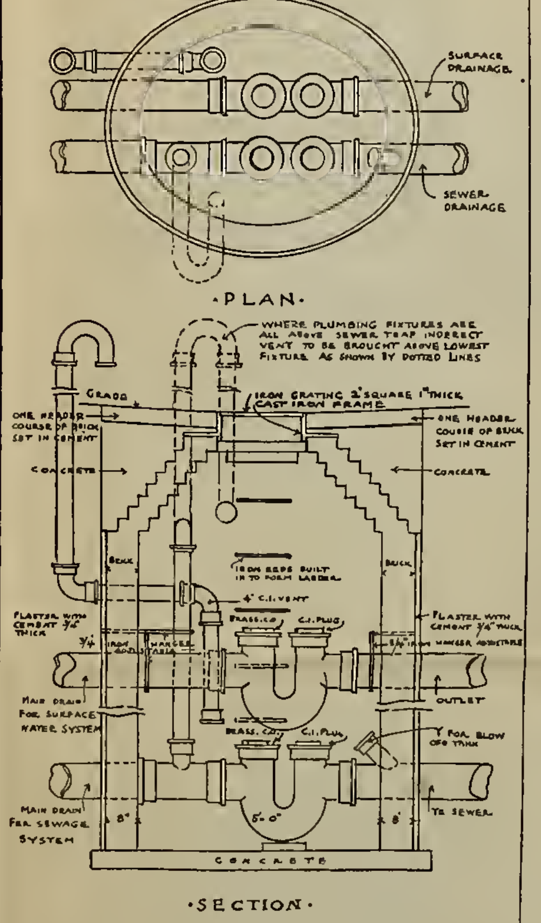
CATCH BASIN



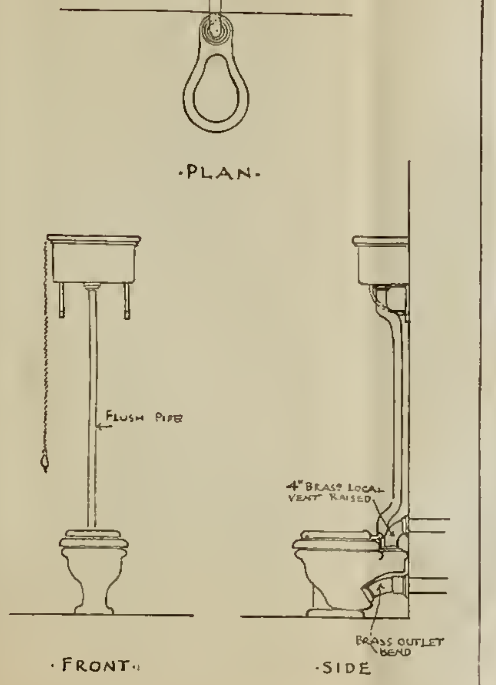
SCHOOLHOUSE PORCELAIN-LATRINES



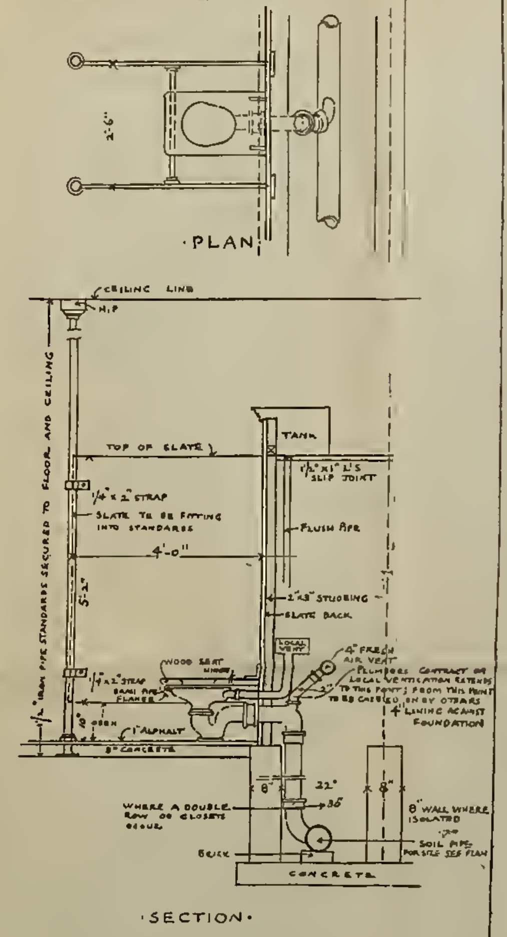
RUNNING-TRAP


SURFACE DRAINAGE
SEWER DRAINAGE
PLAN
WHERE PLUMBING FIXTURES ARE ALL ABOVE SEWER TRAP INDIRECT VENT TO BE BROUGHT ABOVE LOWEST FIXTURE AS SHOWN BY DOTTED LINES
GRADE
IRON GRATING 2' SQUARE 1" THICK
CAST IRON FRAME
ONE HEADER COURSE OF BRICK SET IN CEMENT
ONE HEADER COURSE OF BRICK SET IN CEMENT
CONCRETE
CONCRETE
BRICK
BRICK
IRON RODS BUILT IN TO FORM LADDER
4" C.I. VENT
PLASTER WITH CEMENT 3/4 THICK
PLASTER WITH CEMENT 3/4" THICK
3/4 IRON HANGER ADJUSTABLE
3/4" IRON HANGER ADJUSTABLE
BRASS C.O.
C.I. PLUG
MAIN DRAIN FOR SURFACE WATER SYSTEM
OUTLET
BRASS C.O.
C.I. PLUG
Y FOR BLOW OFF TANK
MAIN DRAIN FOR SEWAGE SYSTEM
8"
5'-0"
8"
TO SEWER
CONCRETE
SECTION

DEPARTMENT TEACHERS-CLOSET

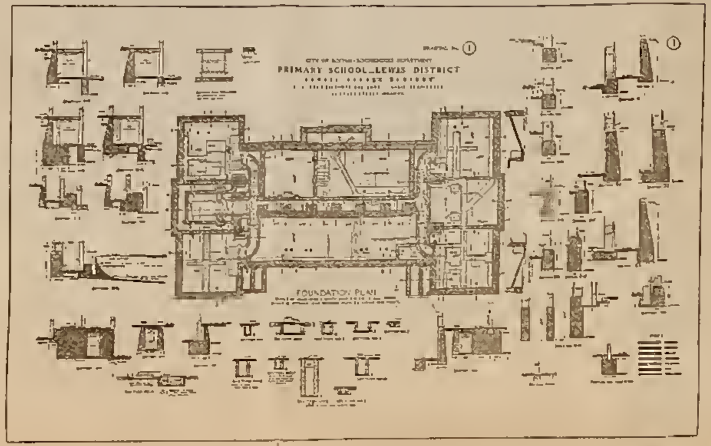


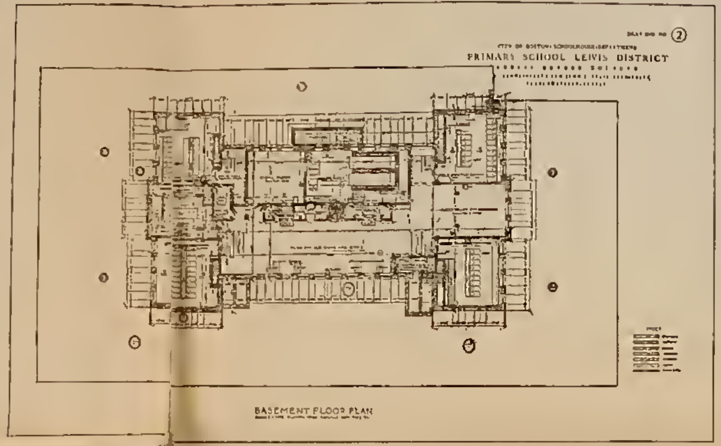
SHORT-HOPPER-CLOSET

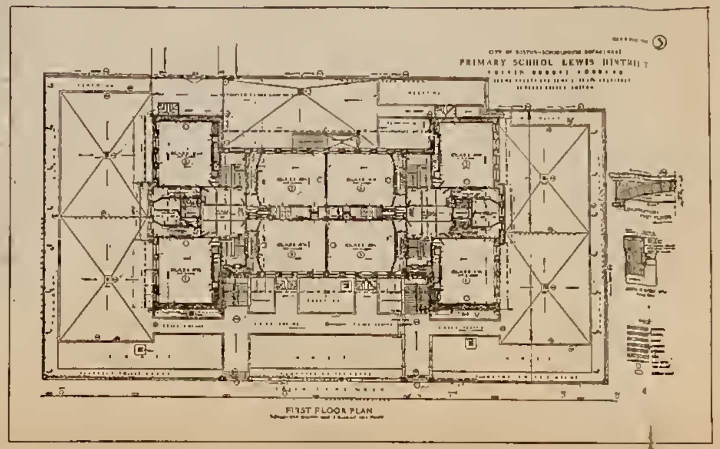

2'-6"
PLAN
CEILING LINE
H.P
1½" IRON PIPE STANDARDS SECURED TO FLOOR AND CEILING
TANK
TOP OF SLATE
1½"x1" L'S SLIP JOINT
1¼"x2" STRAP
SLATE TO BE FITTING INTO STANDARDS
FLUSH PIPE
4'-0"
5'-2"
2"x3" STUDDING
SLATE BACK
LOCAL VENT
4" FRESH AIR VENT
PLUMBERS CONTRACT ON LOCAL VENTILATION EXTENDS TO THIS POINT; FROM THIS POINT TO BE CARRIED ON BY OTHERS
4" LINING AGAINST FOUNDATION
WOOD SEAT HINGE
1¼x2" STRAP
FLANGE
10" OPEN
1" ASPHALT
3" CONCRETE
8"
22"
8"
WHERE A DOUBLE ROW OF CLOSETS OCCUR
8" WALL WHERE ISOLATED
SOIL PIPE FOR SIZE SEE PLAN
BRICK
CONCRETE
SECTION

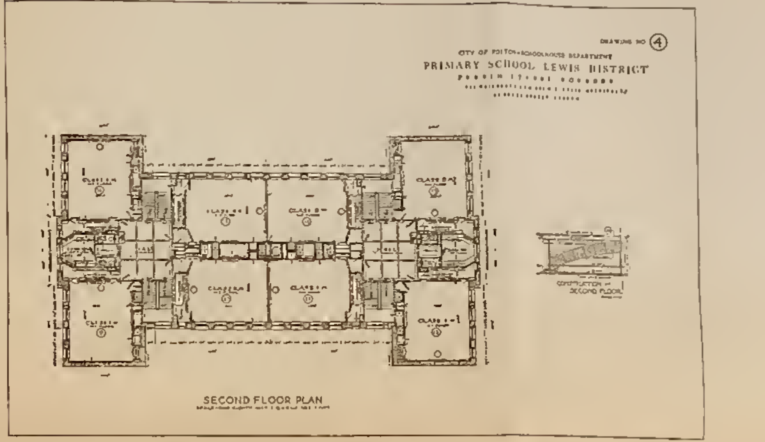
APPENDIX XIV.

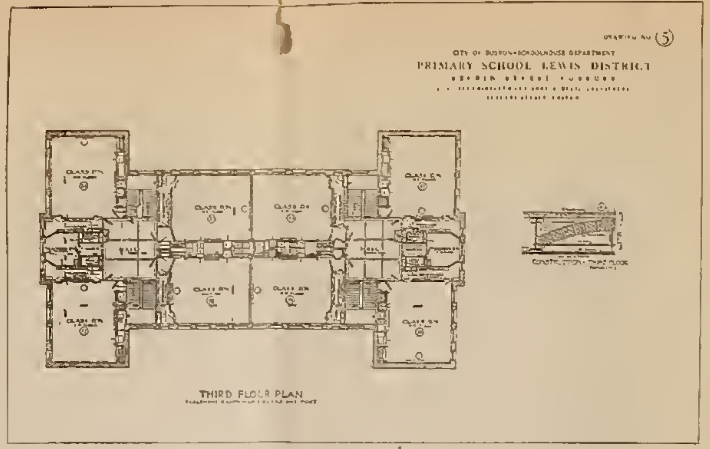
SHEET OF DRAWINGS (EXCLUSIVE OF FRAMING PLANS) SARAH J. BAKER PRIMARY SCHOOLHOUSE, BOSTON, MASS.

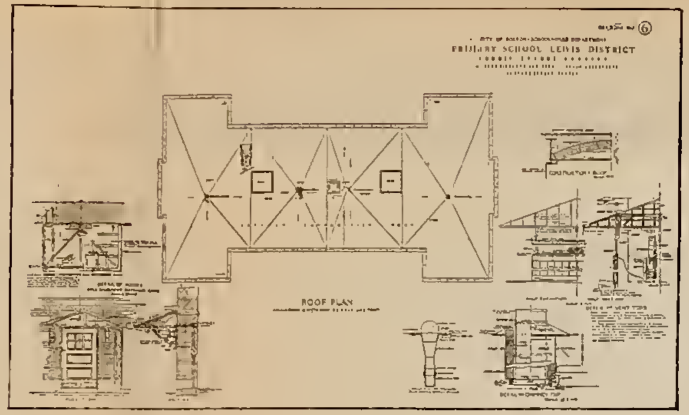


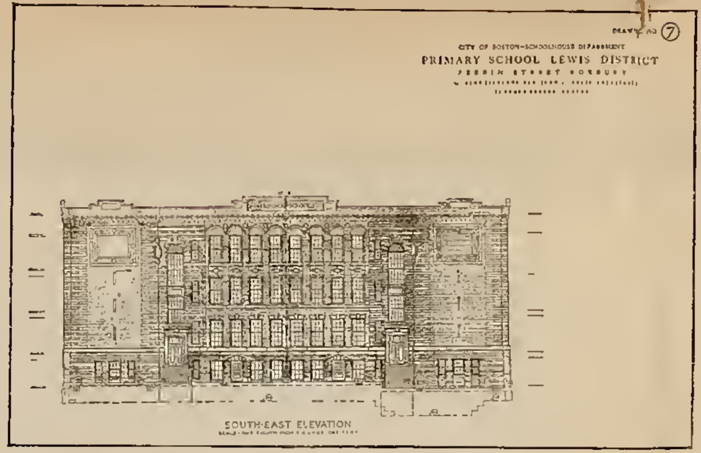


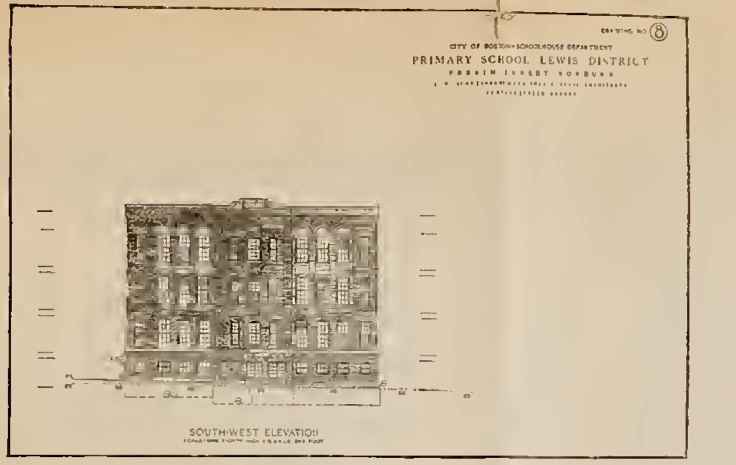


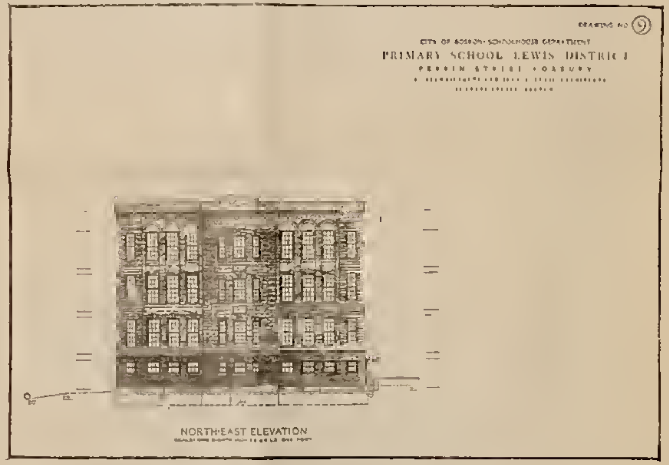


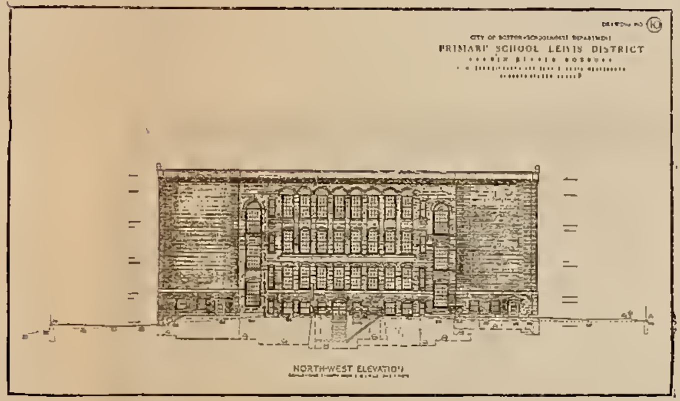


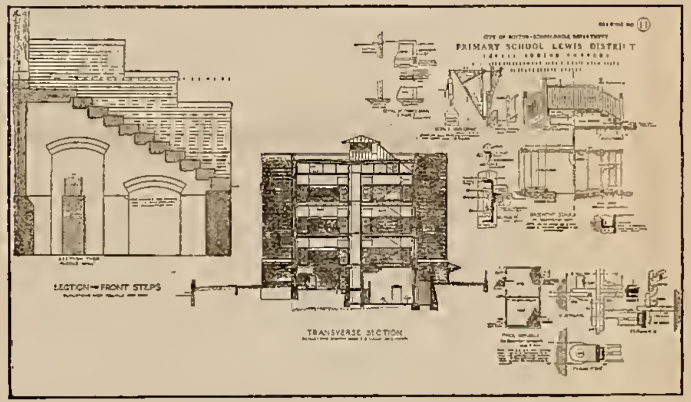


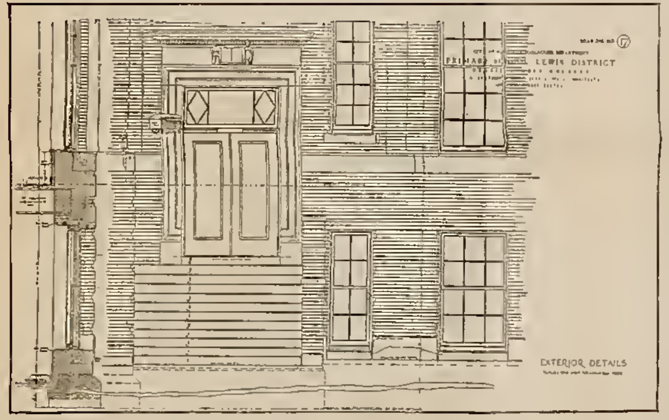


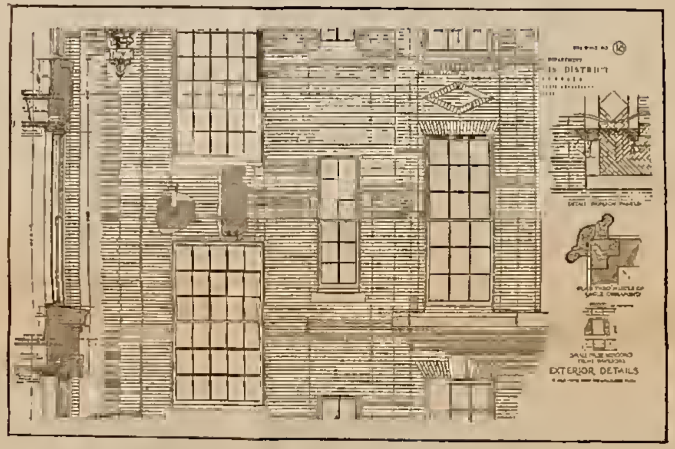


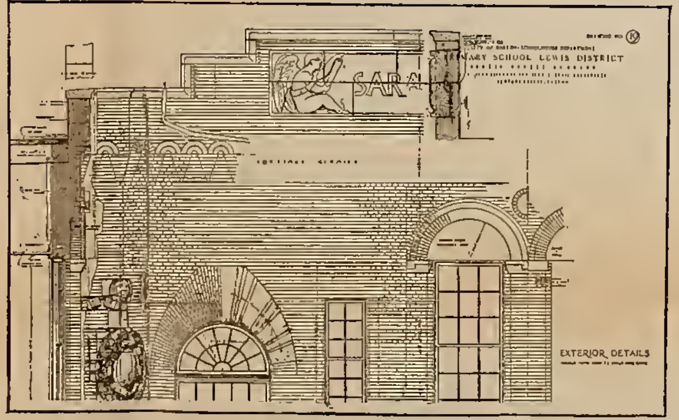


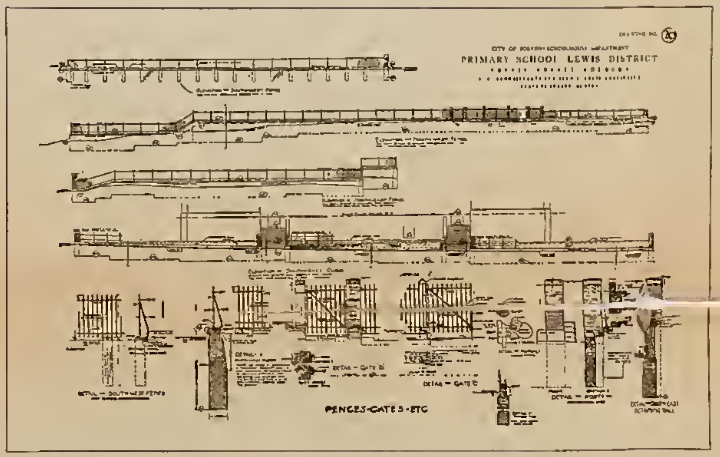


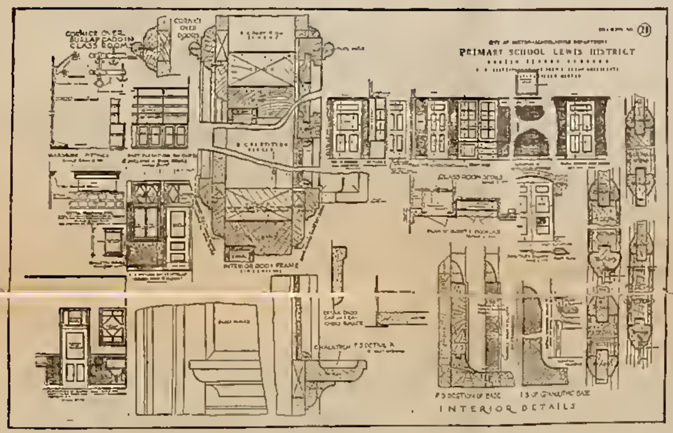


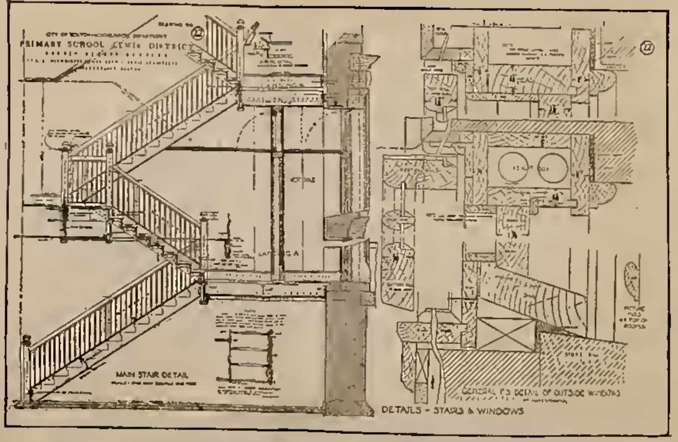


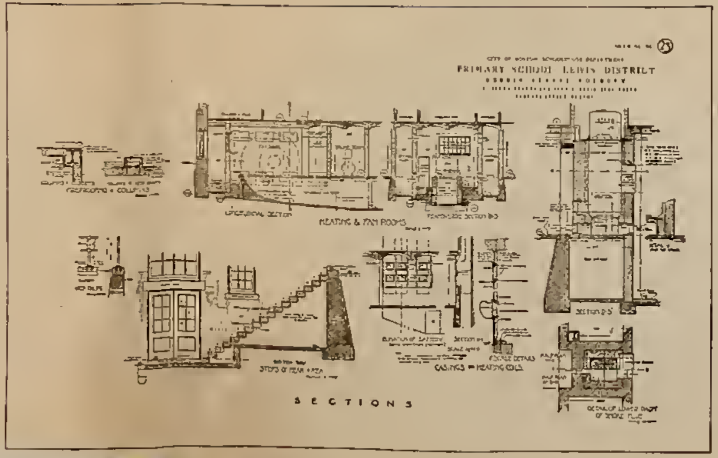


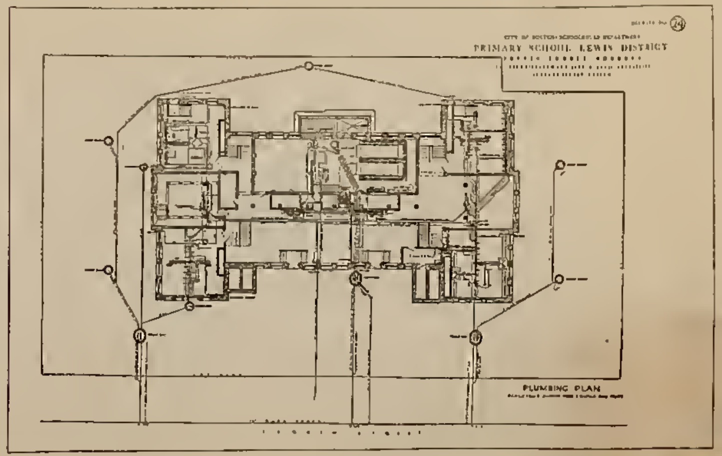


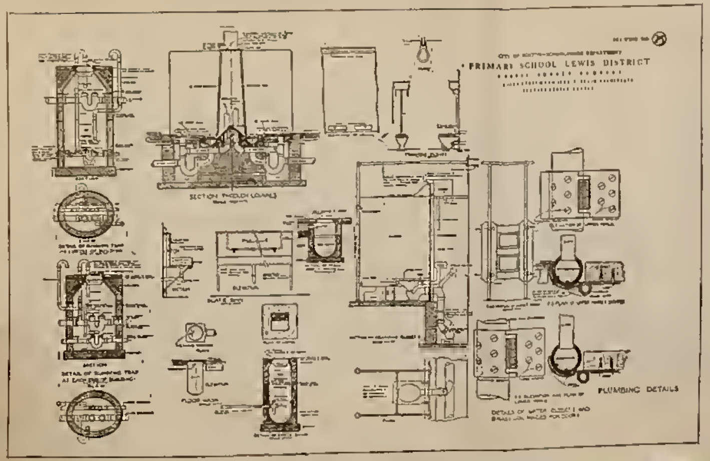












SCHWEINFURTH & CRAIG, ARCHITECTS

APPENDIX XV.

DESCRIPTIVE SCHEDULE OF PERMANENT SCHOOL BUILDINGS.

Date of Completion.	Name.	Rooms.	District.	Architect.	Description.	Location of Lot.	Area of Lot.	Cost of Lot.	Area of Building.	Cubic Contents of Building.	Cost of Building.	Cost per Cubic Foot.	Rated No. of Pupils.	Cost per Pupil.
1870	Aaron Davis	12 Rooms P.	Dearborn	Charles A. Cummings	2d Class, 3 Stories	Yeoman st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Abby W. May	6 " P.	Dillaway	E. M. Wheelwright	2d " 2 "	Thornton st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Aberdeen	3 " P.	Bennett	Lewis H. Bacon	2d " 1 Story	Chestnut Hill ave., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Adams	13 " G.	Adams	Joseph R. Richards	2d " 3 Stories	Belmont sq., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Adams and Chestnut sts	2 Rooms P.	Frothingham	Schoolhouse Agent Department	2d " 1 Story	Adams and Chestnut sts., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Adams street	3 " P.	Gilbert Stuart		2d " 2 Stories	Adams st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Agassiz	14 " G.	Agassiz	E. M. Wheelwright	[illegible]	Brewer st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Albert Palmer	6 " P.	Dearborn	E. M. Wheelwright	[illegible]	Eustis st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Andrews	9 Rooms P.	Quincy	E. M. Wheelwright	[illegible]	Genesee st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Appleton street	12 " P.	Rice Training	Emerson & Fehmer	[illegible]	Appleton st., near Dartmouth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Asa Gray	4 " P.	Hyde	Geo. A. Clough	[illegible]	Weston st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Atherton	8 " P.	Christopher Gibson	Bryant & Rogers	[illegible]	Columbia rd., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Auburn	4 Rooms P.	Thomas Gardner		[illegible]	School st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Austin	6 " P.	Lyman	Gridley J. F. Bryant	[illegible]	Paris st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bailey street	4 " P.	Henry L. Pierce		[illegible]	Bailey st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Baldwin	8 " P.	Washington		[illegible]	Chardon ct.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bartlett street	8 Rooms P.	Dillaway		[illegible]	Bartlett st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	B. F. Tweed	8 " P.	Bunker Hill	E. M. Wheelwright	[illegible]	Cambridge st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Benjamin Cushing	8 " P.	Mather	A. Warren Gould	[illegible]	Robinson st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Benjamin Dean	8 " P.	Thomas N. Hart	Wm. H. Besarick	[illegible]	H st., S. B.	[illegible]	Incl. in Thos. N. Hart Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Benjamin Pope	6 Rooms P.	Gaston	C. J. Bateman	[illegible]	O st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bennett	7 " G.	Bennett	J. Foster Dyer	[illegible]	Chestnut Hill ave., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bennett Branch	6 " G.	Bennett	Geo. A. Clough	[illegible]	Highland st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bigelow	19 " G.	Bigelow	C. J. Bateman	[illegible]	West Fourth st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Blackinton	9 Rooms P.	Blackinton	E. M. Wheelwright	[illegible]	Leyden st., Orient Heights, E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bon Homme Richard	1 Room P.	Mather	Schoolhouse Agent Department	1 Story	Meeting House Hill, Dor.	Mather Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bowditch	15 Rooms G.	Bowditch	H. H. Atwood	3 Stories	Green st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bowdoin	16 " G.	Bowdoin	E. M. Wheelwright	[illegible]	Myrtle st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Brewster	8 Rooms P.	Roger Wolcott	E. M. Wheelwright	[illegible]	Morton st., Mat.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Brewster Annex	3 " P.	Roger Wolcott	Schoolhouse Agent Department	1 Story	Morton st., Mat.	Brewster Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Brighton High			E. M. Wheelwright	3 Stories	Cambridge st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Brimmer	14 Rooms G.	Brimmer		[illegible]	Common st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bunker Hill	14 Rooms G.	Bunker Hill		[illegible]	Baldwin st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Bunker Hill	6 " P.	Bunker Hill		[illegible]	Bunker Hill st., Chas.	Bunker Hill Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Canterbury street	2 " P.	Charles Sumner		[illegible]	Canterbury st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Capen	6 " P.	Thomas N. Hart	Cummings & Sears	[illegible]	Sixth st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Chapman	17 Rooms G.	Chapman	Greenleaf & Cobb	[illegible]	Eutaw st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Charles C. Perkins	10 " P.	Prince	H. H. Atwood	[illegible]	St. Botolph st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Charles Sumner	16 " G.	Charles Sumner	G. A. Clough	[illegible]	Ashland st., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Chestnut avenue	3 " P.	Bowditch		[illegible]	Chestnut ave., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Choate Burnham	9 Rooms P.	Lincoln	E. M. Wheelwright	[illegible]	East Third st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Christopher Columbus	24 " P.	Eliot	Winslow & Bigelow	[illegible]	Tileston st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Christopher Gibson	16 " G.	Christopher Gibson	E. M. Wheelwright	[illegible]	Bowdoin ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Church	6 " P.	Shurtleff	Bryant & Rogers	[illegible]	F st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Comins	15 Rooms G.	Comins	Richard & Park	[illegible]	Tremont st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Common street	8 " P.	Harvard		[illegible]	Common st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cook	6 " P.	Franklin		[illegible]	Groton st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Copley	8 " P.	Warren	James Mulcahy	[illegible]	Bartlett st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cottage place	4 Rooms K.	Comins		[illegible]	Cottage pl., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cudworth	11 " P.	Lyman	E. M. Wheelwright	[illegible]	Gove st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cushman	15 " P.	Hancock	Gridley J. F. Bryant	[illegible]	Parmenter st.	Hancock Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cyrus Alger	8 " P.	Norcross	Geo. A. Clough	[illegible]	Seventh st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dearborn	11 Rooms G.	Dearborn	Edwin J. Lewis	[illegible]	Ambrose st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dillaway	12 " G.	Dillaway	Geo. A. Clough	[illegible]	Kenilworth st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dorchester avenue	4 " P.	Mary Hemenway		[illegible]	Dorchester ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dorchester High			Hartwell, Richardson & Driver	[illegible]	Talbot ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Drake	6 Rooms P.	Norcross	Bryant & Rogers	[illegible]	C st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dudley	11 " G.	Dudley	L. Weissbein	[illegible]	Dudley and Putnam sts., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Dwight	14 " G.	Dwight		[illegible]	West Springfield st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	East Boston High			John Lyman Faxon	[illegible]	Marion st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Edward Everett	10 Rooms G.	Edward Everett	Geo. A. Clough	[illegible]	Sumner st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Eliot	14 " G.	Eliot	Gridley J. F. Bryant	[illegible]	North Bennet st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Ellis Mendell	12 " P.	George Putnam	Andrews, Jaques & Rantoul	[illegible]	School st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Emerson	6 " P.	Wells		[illegible]	Poplar st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Emerson	16 Rooms G.	Emerson		[illegible]	Prescott st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	English High			Geo. A. Clough	[illegible]	Montgomery st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Everett	14 Rooms G.	Everett		[illegible]	West Northampton st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Everett	3 " P.	Thomas Gardner	Gridley J. F. Bryant	[illegible]	Athol st., Bri.	Thomas Gardner Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Farragut	16 Rooms P.	Martin	Wheelwright & Haven	[illegible]	Kenwood rd., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Florence street	6 " P.	Charles Sumner		[illegible]	Florence st., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Franklin	14 " G.	Franklin	Joseph R. Richards	[illegible]	Waltham st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Francis Parkman	8 " P.	Agassiz	Perkins & Betton	[illegible]	Walk Hill st., Forest Hills	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Frederic A. Whitney	8 Rooms P.	Washington Allston	Whitman & Hood	[illegible]	Webster ave., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Freeman	6 " P.	Eliot	Bryant & Rogers	[illegible]	Charter st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Frothingham	15 " G.	Frothingham	Geo. A. Clough	[illegible]	Prospect st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Frothingham Annex	2 " P.	Frothingham	Schoolhouse Agent Department	1 Story	Prospect st., Chas.	Frothingham Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Gaston	14 Rooms G.	Gaston	Geo. A. Clough	3 Stories	East Fifth st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	George Putnam	10 " G.	George Putnam	Geo. A. Clough	[illegible]	Columbus ave., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	George street	6 " P.	Hugh O'Brien		[illegible]	George st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Gilbert Stuart	14 " G.	Gilbert Stuart	E. M. Wheelwright	[illegible]	Richmond st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Girls' High				[illegible]	West Newton st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Glenway	2 Rooms P.	Oliver Wendell Holmes	Geo. A. Clough	1 Story	Glenway st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Glenway Annex	2 " P.	Oliver Wendell Holmes	Schoolhouse Agent Department	[illegible]	Glenway st., Dor.	Glenway Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Grant	4 " P.	Phillips		2 Stories	Phillips st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hancock	14 Rooms G.	Hancock	[illegible]	[illegible]	Parmenter st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hancock Annex	2 " P.	Hancock	Schoolhouse Department	1 Story	Parmenter st.	Hancock Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Harbor View street	4 " P.	Roger Clap	C. J. Bateman	2 Stories	Harbor View st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Harris	8 " P.	Mary Hemenway		[illegible]	Adams st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Harvard	14 Rooms G.	Harvard		[illegible]	Devens st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Harvard	4 " P.	Washington Allston		[illegible]	North Harvard st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Harvard Hill	4 " P.	Harvard		[illegible]	Harvard st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hawes Hall	8 " P.	Bigelow		[illegible]	Broadway, S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Heath street	2 Rooms P.	Jefferson		[illegible]	Heath st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Henry L. Pierce	13 " G.	Henry L. Pierce	H. H. Atwood	[illegible]	Washington st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Henry Vane	4 " P.	Robert G. Shaw	Bacon & Hill	[illegible]	Baker st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hillside	8 " P.	Bowditch		[illegible]	Elm st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hobart street	3 Rooms P.	Bennett	A. H. Vinal	1 Story	Hobart st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Horace Mann			A. H. Vinal	3 Stories	Newbury st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Howard avenue	6 Rooms P.	Phillips Brooks	Geo. A. Clough	[illegible]	Howard ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Howard avenue Annex	2 " P.	Phillips Brooks	Schoolhouse Agent Department	1 Story	Howard ave., Dor.	Howard Ave Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hugh O'Brien	14 Rooms G.	Hugh O'Brien	A. H. Vinal	3 Stories	Dudley and Langdon sts., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hugh O'Brien Annex	2 " P.	Hugh O'Brien	Public Buildings Department	1 Story	Dudley st., Rox.	Hugh O'Brien Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hull	8 " P.	Phillips Brooks	Geo. A. Clough	2 Stories	Quincy st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hyde	14 " G.	Hyde	A. H. Vinal	[illegible]	Hammond st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Ira Allen	6 Rooms P.	Sherwin	Wilson & Webber	[illegible]	Parker st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	James Otis	12 " P.	Lyman	Winslow & Bigelow	[illegible]	Paris and Marion sts., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Jefferson	16 " G.	Jefferson	Shepley, Rutan & Coolidge	[illegible]	Heath st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	John A. Andrew	16 " G.	John A. Andrew	Geo. A. Clough	[illegible]	Dorchester st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	John Boyle O'Reilly	14 Rooms P.	John A. Andrew	Andrews, Jaques & Rantoul	[illegible]	Dorchester st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	John G. Whittier	10 " P.	Henry L. Pierce	Parker & Thomas	[illegible]	Southern ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Joshua Bates	8 " P.	Dwight	A. H. Vinal	[illegible]	Harrison ave.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lawrence	15 " G.	Lawrence		[illegible]	B st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lewis	12 Rooms G.	Lewis	Alden Frink	[illegible]	Dale st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lewis Annex	1 Room M.		Schoolhouse Department	1 Story	Dale st., Rox.	Lewis Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lincoln	18 Rooms G.	Lincoln	Gridley J. F. Bryant	3 Stories	Broadway, S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Little Em'ly	1 Room P.	Mary Hemenway	Schoolhouse Agent Department	1 Story	Adams st., Dor.	Harris Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Longfellow	11 Rooms G.	Longfellow	Walker & Kimball	3 Stories	Hewlett and South sts., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lowell	[illegible]	Lowell		[illegible]	510 Centre st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lowell Annex	3 " [illegible]	Lowell	Schoolhouse Agent Department	1 Story	Mozart st., J. P.	Lowell Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lucretia Crocker	8 " P.	Lowell	A. H. Vinal	2 Stories	Parker st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lyceum Hall	7 Rooms G.	Mather	E. M. Wheelwright	[illegible]	Meeting House Hill, Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lyman	13 " G.	Lyman	Bryant & Rogers	[illegible]	Paris and Gove sts., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Margaret Fuller	6 " P.	Bowditch	E. M. Wheelwright	[illegible]	Glen rd., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Marshall	15 " P.	Oliver Wendell Holmes	Maginnis, Walsh & Sullivan	[illegible]	Westville st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Martin	14 Rooms G.	Martin	A. H. Vinal	[illegible]	Huntington ave., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mary Hemenway	12 " G.	Mary Hemenway	T. M. Clark	[illegible]	Adams st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mather	20 " G.	Mather	Cram, Goodhue & Ferguson	[illegible]	Meeting House Hill, Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mayflower	1 Room P.	William E. Russell	Schoolhouse Agent Department	1 Story	Harbor View st., Dor.	Harbor View St. Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mayhew	14 Rooms P.	Wells	John Lyman Faxon	3 Stories	Chambers st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mead street	4 " P.	Warren		[illegible]	Mead st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mechanic Arts High			E. M. Wheelwright	[illegible]	Belvidere st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Medford street	4 Rooms P.	Prescott	Geo. A. Clough	[illegible]	Medford st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Minot	7 Rooms G.	Minot	A. H. Vinal	[illegible]	Neponset ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mt. Pleasant avenue	3 " P.	Dearborn		[illegible]	Mt. Pleasant ave., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mt. Vernon street	3 " P.	Robert G. Shaw		[illegible]	Mt. Vernon st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Miles Standish	8 " P.	Dudley	Geo. A. Clough	[illegible]	Roxbury and King sts., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Noble	8 Rooms P.	Emerson	Geo. Ropes, Jr.	[illegible]	Princeton st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Noble Annex	3 " P.	Emerson	Schoolhouse Agent Department	1 Story	Princeton st., E. B.	Noble Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Norcross	14 " G.	Norcross	Geo. Ropes, Jr.	4 Stories	D st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	North Margin street	3 " K.	Hancock		[illegible]	North Margin st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Oak square	2 Rooms P.	Bennett	E. M. Wheelwright	1 Story	Nonantum st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Agassiz	6 " P.	Agassiz		2 Stories	Burroughs st., J. P.	Agassiz Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Baker street	1 Room P.	Robert G. Shaw		1 Story	Baker st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Dearborn	14 Rooms G.	Dearborn		3 Stories	Dearborn pl., Rox.	Dearborn Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Dorchester High	8 Rooms P.	Mary Hemenway	Geo. Ropes, Jr.	[illegible]	Centre st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old East Boston High	6 " P.	Lyman		[illegible]	Meridian st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Edward Everett	6 " P.	Edward Everett		[illegible]	Sumner st., Dor.	Ed. Everett Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Gibson	7 " P.	Oliver Wendell Holmes		[illegible]	Abbotsford st., Dor.	O. W. Holmes Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Ira Allen				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Mather	10 Rooms P.	Mather	Emerson & Fehmer	[illegible]	Meeting House Hill, Dor.	Mather Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Parkman				[illegible]	Silver st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Old Roxbury High	8 Rooms P.	Dillaway		[illegible]	Kenilworth st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Oliver Hazard Perry	14 Rooms G.	Oliver Hazard Perry	Clough & Wardner	[illegible]	East Seventh st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Oliver Wendell Holmes	21 " G.	Oliver Wendell Holmes	A. W. Longfellow	[illegible]	School st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Parkman	12 " P.	Lawrence		[illegible]	Broadway, S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Paul Jones	10 " P.	Blackinton	Whitman & Hood	[illegible]	Horace st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Paul Revere	18 Rooms P.	Hancock	Peabody & Stearns	[illegible]	Prince st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Phillips	14 " G.	Phillips	Nath'l J. Bradlee	[illegible]	Phillips st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Phillips Brooks	15 " G.	Phillips Brooks	A. Warren Gould	[illegible]	Quincy and Perth sts., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Phillips street	6 " P.	Comins		[illegible]	Phillips st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Phineas Bates	4 Rooms P.	Longfellow	G. A. Avery	[illegible]	Beech st., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Pierpont	1 Room M.		Gridley J. F. Bryant	[illegible]	Hudson st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Plummer	12 Rooms P.	Adams	H. H. Atwood	[illegible]	Belmont st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Polk street	6 " P.	Prescott	Geo. A. Clough	[illegible]	Polk st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Poplar street				1 Story	Poplar st., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Pormort	6 Rooms P.	Eliot	Nath'l J. Bradlee	4 Stories	Snelling pl.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Prescott	10 " G.	Prescott		[illegible]	Elm st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Prescott Annex	1 Room M.	Prescott	Schoolhouse Agent Department	1 Story	Elm st., Chas.	Prescott Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Prince	13 Rooms G.	Prince	Geo. A. Clough	2 Stories	Newbury st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Public Latin			Geo. A. Clough	[illegible]	Warren ave.	English High Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Quincy	14 Rooms G.	Quincy		[illegible]	Tyler st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Quincy street	3 " P.	Mather	Geo. A. Clough	1 Story	Quincy st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Rice Training	14 Rooms G.	Rice Training	Emerson & Fehmer	3 Stories	Dartmouth st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Robert G. Shaw	8 " G.	Robert G. Shaw	E. M. Wheelwright	[illegible]	Hastings st., W. R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Roger Clap	10 " P.	William E. Russell	Wm. H. Besarick	[illegible]	Harvest st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Roger Wolcott	15 " G.	Roger Wolcott	Everett & Mead	[illegible]	Morton and Norfolk sts., Mat.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Roxbury High			A. H. Vinal	[illegible]	Warren st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Rutland street	6 Rooms P.	Dwight		[illegible]	Rutland st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Samuel G. Howe	8 " P.	Lawrence	Geo. A. Clough	[illegible]	Fifth st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Samuel W. Mason	14 " P.	Hugh O'Brien	John A. Fox	[illegible]	Norfolk ave., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Sarah J. Baker	24 Rooms P.	Lewis	Schweinfurth & Craig	[illegible]	Perrin st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Savin Hill	4 " P.	Edward Everett	A. H. Vinal	[illegible]	Savin Hill ave., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	School street	2 " P.	George Putnam		1 Story	School st., W. R.	[illegible]	Geo. Putnam Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Sharp	9 " P.	Bowdoin		3 Stories	Anderson st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Sherwin	16 Rooms G.	Sherwin	Emerson & Fehmer	[illegible]	Madison sq., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Shurtleff	14 " G.	Shurtleff	Bryant & Rogers	[illegible]	Dorchester st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Simonds	[illegible]	Bigelow		[illegible]	Broadway, S. B.	Hawes Hall Lot.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Skinner	6 " P.	Brimmer	Nath'l J. Bradlee	[illegible]	Fayette st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Smith street	3 Rooms K.	Comins		[illegible]	Smith st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Somerset street	6 " P.	Phillips		[illegible]	Somerset, corner Allston st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	South Boston High			Herbert D. Hale	[illegible]	Thomas Park, S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Stephen M. Weld	8 Rooms P.	Charles Sumner	E. M. Wheelwright	[illegible]	Seymour st., Ros.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Stoughton	8 Rooms P.	Gilbert Stuart		[illegible]	River st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Tappan	6 " P.	Chapman	George Ropes, Jr.	[illegible]	Lexington st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Thetford avenue	6 " P.	Roger Wolcott	Geo. A. Clough	[illegible]	Thetford ave. and Evans st., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Thomas Gardner	11 " G.	Thomas Gardner	Stickney & Austin	[illegible]	Athol and Brentwood sts., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Thomas N. Hart	17 Rooms G.	Thomas N. Hart	A. H. Vinal	[illegible]	East Fifth st., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Thornton street	3 " P.	Dillaway		[illegible]	Thornton st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Tileston	4 " P.	Roger Wolcott		[illegible]	Norfolk st., Mat.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Tuckerman	10 " P.	Gaston	Charles A. Cummings	[illegible]	Fourth and I sts., S. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Tyler street	6 Rooms P.	Winthrop		[illegible]	Tyler st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wait	8 " P.	Franklin	Gridley J. F. Bryant	[illegible]	Shawmut ave.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Walnut street	7 " P.	Minot		[illegible]	Walnut st., Neponset	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Warren	14 " G.	Warren		[illegible]	Summer st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Washington	24 Rooms G.	Washington	Everett & Mead	[illegible]	Norman st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Washington Allston	10 " G.	Washington Allston	Geo. A. Clough	[illegible]	Cambridge st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Washington Allston Annex	6 " G.	Washington Allston		[illegible]	Cambridge st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Washington street	3 " P.	Agassiz		[illegible]	Washington st., Forest Hills	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Washington street	2 Rooms P.	Robert G. Shaw		[illegible]	Washington st., Germantown	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Way street	3 " P.	Quincy	Gridley J. F. Bryant	[illegible]	Way st., near Harrison ave.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Webb	4 " P.	Lyman	Gridley J. F. Bryant	[illegible]	Porter st., E. B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wells	12 " G.	Wells	Richards & Park	[illegible]	Blossom st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	West Concord street	11 Rooms P.	Everett		[illegible]	West Concord st., near Newland st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	West Roxbury High				[illegible]	Elm st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	William Bacon	10 Rooms P.	Dudley	James Mulcahy	[illegible]	Vernon st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	William E. Russell	14 " G.	William E. Russell	James Mulcahy	[illegible]	Columbia rd., Dor.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	William H. Kent	8 Rooms P.	Frothingham	E. M. Wheelwright	[illegible]	Moulton st., Chas.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	William Wirt Warren	5 " P.	Thomas Gardner	E. M. Wheelwright	[illegible]	Waverly st., No. Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Williams	4 " P.	George Putnam	E. M. Wheelwright	[illegible]	Homestead st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Winchell	13 " P.	Wells	A. H. Vinal	[illegible]	Blossom st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Winship	14 Rooms P.	Bennett	Whitman & Hood	[illegible]	Dighton st., Bri.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Winthrop	14 " G.	Winthrop	Gridley J. F. Bryant	[illegible]	Tremont st.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Winthrop street	4 " P.	Lewis	Richards & Park	[illegible]	Winthrop st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	W. L. P. Boardman	8 " P.	Lewis	James Mulcahy	[illegible]	Munroe st., Rox.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wyman	6 Rooms P.	Lowell	E. M. Wheelwright	[illegible]	Wyman st., J. P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES.

G.—Grammar. P.—Primary. K.—Kindergarten. M.—Manual Training. S.—Special.

The cost of buildings does not include the architect's commission.

In nearly all of these buildings there were additional charges for carpentry and painting, covering items not included in the contract for buildings, such as bookcases, fittings of cookery and manual training rooms, telephones, electric fixtures, the painting and tinting of walls, etc.

The cost of the buildings erected between 1873 and 1884 taken from City Architect's Report, 1884.

In counting rooms only class rooms are taken, and pupils are averaged at 50 to a room. See page 5.

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[1] The cost of this building includes cost of repairing adjoining property.
[2] Purchased [illegible]. The cost of lot includes cost of building.
[3] Grading, [illegible], $[illegible].
[4] Addition built in [illegible], Public Buildings Department, Architects.
[5] Grading, [illegible], $[illegible].
[6] This cost includes cost of Public Latin.
[7] Remodeled in [illegible].
[8] Remodeled in [illegible], Charles A. Cummings, Architect.
[9] Cookery School.
[10] Cost of work-benches and other equipment not included.
[11] Unoccupied.
[12] Cost of land and building included in cost of English High.
[13] Includes 2 kindergarten rooms.
[14] Addition built 1902, Wales & Holt, Architects.
[15] Addition built in [illegible], E. M. Wheelwright, Architect.
[16] Each room accommodates 44 pupils.
[17] This cost includes $[illegible] expended as an extra on increased depth of foundation necessitated by the condition of the site.
[18] Piles driven to support foundation.
[19] Includes Cushman and Hancock Annex.
[20] 4-room addition built in [illegible], [illegible] Perkins, Architect.
[21] Addition built in [illegible], Andrews, Jaques & Rantoul, Architects.
[22] Used as storehouse.
[23] Includes cooking-room and manual training room in basement.
[24] Uncompleted.
[25] 3 rooms added in 1904.
[26] First-class construction except roof.
[27] Mill construction.